People Inc. Technical Guide

PeopleInc®
by P&A

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1. Introduction

Overview

People Inc. is a software system designed to assist users in the management of personnel records. People Inc. enables the user to manage details of employees (including historical records), companies (including information relating to the company's structure), vacancies, training courses and vehicles used for work. The system enables users to manage all aspects of an employee's employment, from recruitment to retirement. A variety of documentation can be generated from the system including letters and reports.

Software Version

This manual is written for version 3.4.x.x of People Inc. While many of the features will be the same, differences in functionality will be apparent when this manual is used in conjunction with other versions of People Inc.

System Features

Information recorded in People Inc is accessed via data-screens (enabling users to add, modify and delete details). Users can apply filters to the data and search for entries based on any field. It is possible to generate letters, e-mails and reports from drop-down menus on the data-screens, and to attach documents to individual records.

The data managed by People Inc is stored using Microsoft SQL Server. This provides reliability, accessibility, scalability and data security. Where 5 concurrent users (or fewer) require access to the system, a 'desktop' version of MS SQL Server can be used to record data. A copy of this version of MS SQL Server is supplied free of charge with People Inc.

People Inc includes a Screen Designer that enables users to modify the system's data screens. Further screens can also be added to the system using this tool. A wide variety of data-types and data controls can be incorporated into screens, and data can be validated, calculated, or automatically generated. The Screen Designer enables users to develop the system to meet the needs of their organisation.

A fully featured report designer is included with the system enabling users to run, add and modify report templates. Using the report designer, users can generate reports comprising data from all areas of the database. These reports can be previewed, printed, exported in a variety of file formats (including PDF and MS Excel).

Template letters (created using MS Word) can be defined within the system incorporating data from all areas of the system. A history of when letters are generated can be recorded automatically. The letters can be sent via e-mail (using MS Outlook or an SMTP mail server) if required, either as file-attachments or as e-mail body text.

Flexible user-defined access profiles enable administrators to set the rights associated with user accounts. Access to all system functions can be granted to groups of users, as can access to individual items of information held in the system (this includes setting read-only access and 'data-range' access).

A wide variety of files can be associated with records in the database (MS Word Documents, spreadsheets Adobe PDFs, e-mails, etc.). Embedded MS Word documents (and other text-

based documents) can be indexed and searched using key-word searches. This is useful for example, for searching CVs for particular information.

The system enables users to associate actions with individual records in the database, and these can be managed from the record in question. The actions recorded in the system can also be displayed globally to produce a user-specific or date-specific action list.

Wizards are provided to manage key tasks in People Inc such as adding new employee details.

Information Managed using People Inc

Extensive employee details can be managed using People Inc. This includes detailed personal information (name, contact details, equal opportunities information, etc.) key dates (start date, end of probation, contract end date, leaving date, etc.), a full job and salary history (including work patterns and FTE details), absence allowances and entries (holiday, sickness, etc.), training and development details (appraisals training completed, training needs, etc.), and much much more (medicals, visas and work permits, disciplinary and grievance, equipment issued, exit interview information, etc).

In addition to this, the system enables users to manage details of the organisations structure (multi-company, multi-location, departmental information, job definitions), recruitment information (vacancies, applicants, interviews, job offers), training course details and details of vehicles used for work.

One of the key benefits of People Inc is the flexibility of the database. The users are able to add screens and data-items to the system as required.

New in People Inc version 3

A significant number of features have been added or upgraded in People Inc for version 3. These are detailed below.

The system features a smart new look-and-feel (influenced by Windows Vista and Windows 7) and a selection of style options have been added to the user-preferences. In addition, it possible for screens to use the (Windows) colour scheme if desired.

Access to record-related Actions and documents has been made much easier (using tabs on each screen) and a ‘tree’ view has been added to data screens to enable users to open associated historical records without having to change screens.

It is now possible to run People Inc in normal or expert mode. The management console is hidden in normal mode making the user interface simpler and therefore easier for new users to use. Furthermore, some of the administrator functionality has been moved to a separate module; the management console in version 3 is therefore simpler to use.

The search facility in version 3 provides a number of new benefits. It is now possible to have a search pane permanently open; making it quicker and easier to find records in the database.

The speed and performance of People Inc has been enhanced, with the focus on both large and small volumes of data, large and small populations of users. Version 3 also enables direct remote access over a wide area network (without the need for Citrix or Terminal Services).

A web-client can be provided for occasional users of the system, or for those who need access from a number of locations/computers (for example, line-managers, or agency staff). Security profiles are rigorously applied when this approach is taken and users can access 90% of the system functionality using a web browser. This means that no software need be installed onto a computer in order that the user can access the system.

In version 3 when an embedded document is modified, the system prompts the user to save the changes. Once embedded, the indexing of keywords (required for the word search feature) can be enabled or disabled for individual documents as required. Version 3 also has an enhanced keyword search facility.

Version 3 enables users to send e-mail via MS Outlook (installed on their PC) or via an SMTP mail server (for example Microsoft Exchange, Lotus Notes or Groupwise).

In previous versions of People Inc. it was only possible to define filters based on information in the screen that is to be filtered. So for example, a list of employees can be filtered based on the employee status. In version 3, criteria can also be based on data from related screens. A list of employees can therefore now be filtered where employees have not had a recent medical for example.

In version 3 it is possible to make one-off (temporary) changes to a letter template before merging data. This is particularly useful if the body text in the letter needs to be slightly different each time it is sent out. It is also possible to copy existing letter templates. The text contained in the newly created template can then be modified. This makes creating new templates much easier and quicker, without the need to set up data queries.

The version 3 screen designer can now include information about system users within screens. Integrated with user-security, this provides a powerful means to control access to information within the database.

Plug-ins and wizards can be used to provide custom functionality in version 3. A suite of standard wizards is supplied with the system.

The concept of user access profiles has been implemented in version 3. Any number of profiles can be defined within the system (detailing the report templates, letter templates, screens and data that can be accessed by a group of users). A user account can access the system via more than one profile if required. Creating accounts and managing access rights is now more powerful and quicker as a consequence.

Version 3 offers full multi-lingual operation if required.

Related Products

P&A Software markets a range of HR-related products designed to manage all aspects of Human Resources. These include the People Inc. HR system, a full time and attendance solution called People Inc. Time, the Knowledge Lab training administration system, and the Staffspotter recruitment management system. All of these products can be accessed by both Windows and web clients. A web-based solution that gives managers and employees self-service access to both the People Inc. system and the People Inc. Time system is also available. This is called the Employee Intranet.

2. Contacting P&A Software

Contact details

People Inc is developed and maintained by P&A Software Solutions in the UK with technical back-up from our in-house developers based in the Netherlands. It is possible to contact P&A Software Solutions in the following ways:

Telephone:	01908 265111*
e-Mail:	enquiries@pasoftware.co.uk
Internet:	www.pasoftware.co.uk
Address:	The Old Pin Factory 6B Church Street Stony Stratford Milton Keynes MK11 1BD

* (Monday to Friday – 09:00-17:30, except UK bank holidays)

Maintenance and Support

Help desk support is available for People Inc users. This is designed to help users with day-to-day queries on functionality, and to ensure that users get the most out of the People Inc system. Free system updates are made available as part of this service.

User Training and Consultancy services

Where users are new to the system, we recommend that they attend a training course. User training is available for all levels of user. An introductory course is designed to familiarise users with all the features required for day-to-day system use. The advanced (Administrators) course covers People Inc.'s configuration tools. Report Writer training is also available.

Users who require specific features in their system can use the configuration tools to add these. Alternatively, our consultants are available to help with this customisation. Where complex additional functionality is required, we recommend that any changes are discussed with our consultants before they are made.

3. People Inc Modules

Overview

A number of modules are provided with the People Inc system. These are as follows: the database; the Application Server, the Windows client, the System Administration Module, the Screen Designer, the Translation Module the Maintenance Manager module, the Web Server, the Web Client.

Database

The People Inc databases run under MS SQL Server. Each system records information within a number of databases. All data in the People Inc system is stored in one of these MS SQL Server database. A Global database is used to record the configuration of the system screens, report templates, letter templates, user profiles, etc.

It is possible to configure multiple user-databases on one server using one copy of People Inc. All databases on a single server will have the same configuration of screens, reports and letters. It is not possible to transfer data between databases using the People Inc system. The computer that hosts the databases is known as the database server.

Application Server

The Application Server provides the link between the databases and the various software clients. Most of the processing of information is done by the Application Server.

In a simple implementation of People Inc, the Application Server will be installed on the same computer as the databases (the database server). It is possible to run the Application Server on a separate computer if desired. A simple installation of People Inc runs just one copy of the Application Server. It is possible however to run multiple copies of the Application Server if additional resilience is required. A utility is provided to enable users to configure the Application Server.

A separate Web Application Server is used to provide access to the system via the Web Client.

Windows Client

The People Inc Windows client is installed on users' computers. This software provides the user interface. All day-to-day People Inc functionality is provided via the Windows Client (dependent on the users' access profile).

The Windows Client software logs onto a copy of the Application Server. A utility is provided to configure the Windows Client.

System Administration Module

The System Administration Module enables administrators to manage the People Inc system. This includes the definition of user access profiles, creation of new databases, managing licenses, creating backups, etc. This module connects to the database via the Application Server.

Screen Designer

The Screen Designer enables users to modify the screens in the People Inc system and to add new screens.

Translation Module

People Inc is available in English, Spanish and Dutch. The Translation Module enables users to modify labels and messages in the system, and to translate the system into further languages if required.

Maintenance Manager

Where an implementation of People Inc uses MSDE, the Maintenance Manager is required to restore database backups onto the server. It is also possible to use the Maintenance Manager with a full copy of MS SQL Server.

Web Client

The People Inc Web Client runs under Microsoft IIS. This module provides access to People Inc functionality via a web browser. The Web Client is normally installed on a dedicated computer, but it is possible to run the Web Client on the database server if required. The Web Server is configured to connect to a copy of the Web Application Server.

Employee Intranet (employee self service)

The People Inc Employee Intranet enables employees to view their own details (as held in the system) and send requests for time off. These requests are automatically routed to their manager. Managers can view (and optionally modify) details associated with their employees. They can also approve (or decline) requests for time off made by members of their team. Details of approved requests are recorded in the employee's absence records in the system.

4. System Installation

Overview

People Inc. requires that at least 3 components be installed and configured; these are the People Inc. databases, the Application Server, and the People Inc. Windows Client software. If required, it is possible to load all three components onto one computer. However, in a standard installation the databases and Application Server are installed on one computer and the Windows client installed on a number of additional computers (one for each user).

One (or more) of the users are normally nominated to be an administrator, and in addition to the Windows client, they should also have the System Administration Module, the Screen Designer and the Translation Module installed on their computers.

If required, the Windows client (and additional administrator modules) can be installed and run on a Citrix (or Terminal Services) server rather than on individual users' PCs.

If one of the optional web applications (the Web Client or the Employee Intranet) is to be used, a web site must be loaded on a web server and a the Web Application Server must be installed on a server. The Web Application Server can be loaded on the same server as the databases; however it is recommended that a second server is used to host the web applications (particularly if access to the system is required from the Internet).

If additional resilience is required, the server elements can be implemented over 3 servers (a server to host the databases, a server to run the Application Server and a third server to host web services). Further resilience can be achieved by adding Application Servers and Web servers if required.

System Requirements

People Inc. databases are managed using Microsoft SQL Server 2000, MS SQL Server 2005 or MS SQL Server 2008 (People Inc. will not work with older versions of MS SQL Server). People Inc. also requires that the Microsoft .NET framework (version 2.0) is installed.

A copy of the cut-down version of MS SQL Server 2005 (SQL Express) is supplied free of charge for use with People Inc. When using SQL Express, access is restricted to a maximum of 5 concurrent users, and database size restricted to a maximum of 4GB. If one of the web applications is to be used, a processor license for SQL Server is required.

For People Inc. to function correctly, mixed-mode authentication (rather than Windows authentication) must be enabled within MS SQL Server. If an existing copy of MS SQL Server is used, mixed mode authentication must be enabled. For trouble-free installation, the SQL Server service should be configured to run as a Network Service.

Detailed below are the hardware specification and configuration required to support up to 10 concurrent People Inc. users, and 50 concurrent web-client users. The details given are recommended specifications for providing 'normal' system performance. Other factors (for example the number of users, level of activity, network capacity/usage and volumes of data,) will all influence system performance.

The minimum requirements for the database server computer system (used to host the databases and run the Application Server) are as follows:

- Processor: dual core processor with 2MB cache
- Memory: 4GB
- Disk space: 500MB to 1GB. MS SQL Server requires up to 200MB of hard disk space and for planning purposes, we recommend that an additional 200Mb of storage is allocated for each People Inc. database. Requirements for disk space will vary with user data volumes (particularly where large file attachments are saved in the system).
- Operating systems: Windows 2000 Server (sp3) or later. In addition MS SQL Express based systems will run on the following operating systems: Windows XP Professional Windows Vista, Windows 7.
- Network: 100Mb/s minimum
- Database: MS SQL Server 2000 or later (processor license required for Web Client access), MS SQL Express (maximum 5 users, 4GB data, no web client)
- Other software: Microsoft .NET framework (2.0), SMTP mail server

The minimum requirements for client computer systems (used to run the Windows Client, and optionally, the System Administration Module, the Screen Designer and the Translation Module) are as follows:

- Processor: An Intel Pentium 4 (or equivalent) 1200 MHz (or higher) processor
- Memory: Windows XP - 512MB Windows Vista/Windows 7 – 2GB.
- Disk space: Each client computer requires 150 MB of disk space for the People Inc. software.
- Operating systems: Windows XP Professional, Windows Vista, Windows 7.
- Other software: MS Office XP or later.
- Windows Terminal Services and Citrix are supported.

The minimum requirements for the web server computer (used to host the Web Client and the Employee Intranet) is as follows:

- Processor: dual core processor with 2MB cache
- Memory: 4GB
- Disk space: The Web Client or Employee Intranet require 200MB
- Operating systems: Windows 2000 Server (sp3) or later.
- Network: 100Mb/s minimum
- Internet 4Mb/s ADSL or faster
- Other software: MS IIS version 5 or later, MS .NET framework 2.0, ASP.net 2.0.
- Web Client access – users PC: Internet Explorer version 6 (IE 6) or higher, Firefox 3.5, Safari 4, Google Chrome.

The Server and Client elements of People Inc. can run on a single computer or on separate PCs across a local area network (at a minimum recommended network speed of 100Mbps). For access to a server via a LAN, we recommend that the TCP/IP protocol be used. For further details on networking requirements, see the MS SQL Server documentation.

To generate letters and e-mails, People Inc. can use the MS Office applications MS Word and MS Outlook; the system can link to MS Office XP (2003), MS Office 2007 or MS Office 2010,

applications. When this option is chosen, the letter templates used by People Inc. are formatted as MS Word mail-merge documents.

Where mail merge letter templates are created for example using MS Word 2010, these are incompatible with MS Word XP (or earlier versions). It is therefore recommended that either People Inc. users all use the same version of MS Word, or that letter templates are created using the earliest version of Word in use. People Inc. can also export data to MS Excel format spread sheets (and Adobe Acrobat PDF documents).

If MS Office is not available, letters can be created in the Rich Text File format (RTF), and opened in an alternative text editor. Emails can be sent by any e-mail software which is compatible with the MAPI standard. Alternatively users can send emails directly via the application server. The application server will then send these emails to an SMTP server.

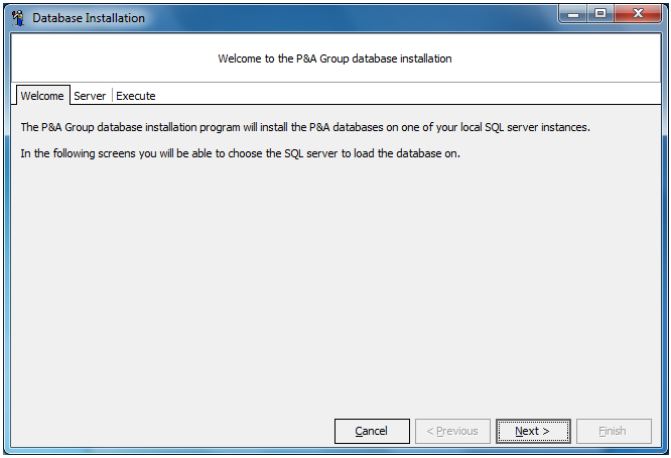
Database Installation

These instructions assume that SQL Server is running, and mixed mode authentication is enabled. Please note that it may be necessary to stop the anti-virus software temporarily while this installation is being performed.

If the databases are to be installed with the Windows Installer package (supplied), to avoid potential problems related to access rights (for example, if a remote desktop connection is used in combination with SQL Server authentication the installation often fails when attempting to write entries to the Windows registry) it is recommended that the database installation is run from the server console logged in as a Windows local administrator.

On the Server, run the PSPPeopleIncDatabase_3.4.2.msi Windows Installer package located in the People Inc. 3.4.2 folder on the CD. This will install and configure the PI databases. The first steps of the installation ask for user details and file locations; we recommend that the default locations (those suggested by the installation wizard) are used. The following screen is then displayed:

Initial Installation Screen



Click Next, and provide log-in information.

The Server name defaults to the name of the computer (server) the installation is running on. If the copy of SQL Server that is to be used is the default instance on this server, this server name will be correct.

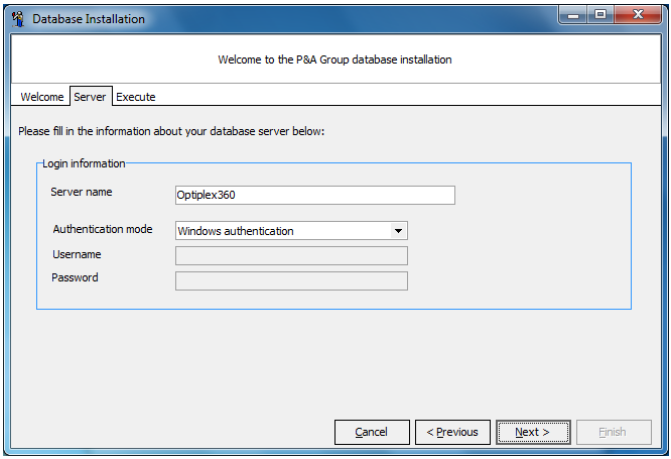
When SQL Express (included free with People Inc.) is being used to host the databases, or where a named instance of SQL Server is used, the Server name must be changed to <servername>\<instancename>.

If SQL Express is being used the instance name is set to SQLEXPRESS by default, the server name (in the dialogue above) should therefore be:

<servername>\SQLEXPRESS

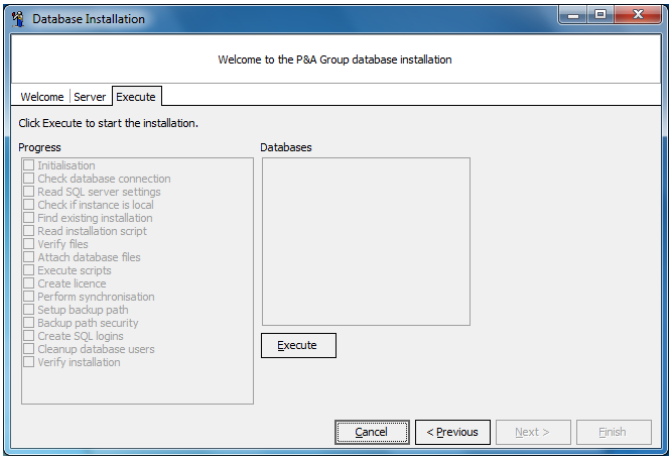
The databases can be installed using Windows authentication (based on the current Windows user account) or by using the SQL Server system administrator account (username: SA). If the current Windows user does not have the necessary rights/privileges this mode cannot be chosen and the password for the SQL Server SA account will be required.

Log in to Server



Click Next, the final step in the installation is shown.

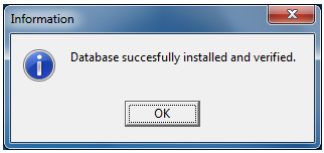
Perform Installation



Click Execute.

Following a successful installation, a tick is added to all the elements on the screen and a message is displayed.

Confirmation of Successful Installation



Click OK and click Finish on the 2 previous dialogues.

Note that it is also possible to install the People Inc. databases without using the Windows Installer package. To do this, users must first request a copy of the People Inc. database back-up files from P&A Software. Before these can be restored, the user must manually create SQL Server databases within SQL Server. The databases must then be restored using the Maintenance Manager application (see the chapter in this guide on the Maintenance Manager).

Application Server Installation

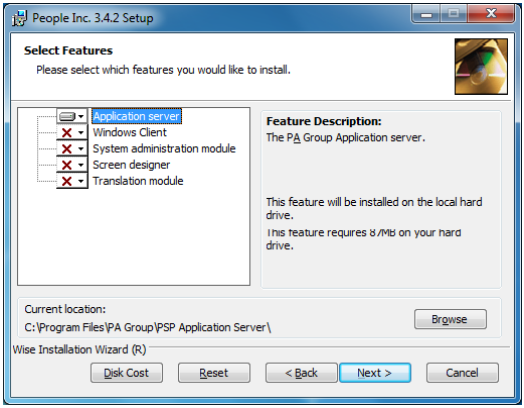
The Application Server is installed as part of the People Inc. client installation. It is recommended that the installation is run from the server console logged in as a Windows

local administrator. Please note that it may be necessary to stop the anti-virus software temporarily while this installation is being performed.

On the server, run the PSPPeopleInc_3.4.2.msi Windows Installer package located in the People Inc. 3.4.2 folder on the CD. This will install and configure the People Inc. Application Server. The first steps of the installation ask for user details and file locations; we recommend that the default locations (those suggested by the installation wizard) are used.

The following screen is then displayed:

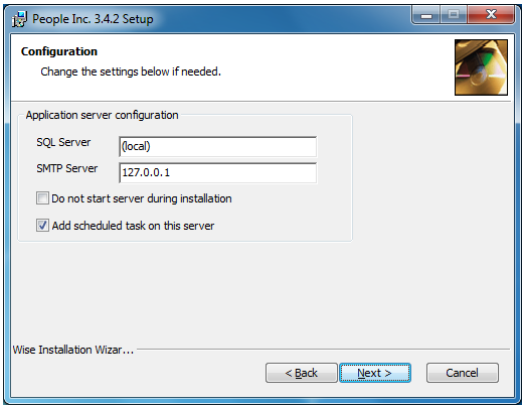
Select Features to Install



Select just the Application Server for installation, click Next

Details of the SQL Server and optionally an SMTP mail server are defined on the next screen.

Application Server Configuration



If the Application Server is to be installed on the same computer as the SQL Server, and the default instance of SQL Server is used, we recommend that the default settings are used (see image above).

If SQL Express is to be used to host the People Inc. databases, (local)\SQLEXPRESS should be used for the SQL Server.

If the Application Server is not installed on the same computer as the SQL Server or a named instance of SQL Server (or SQL Express) is used, different options will need to be entered in this screen:

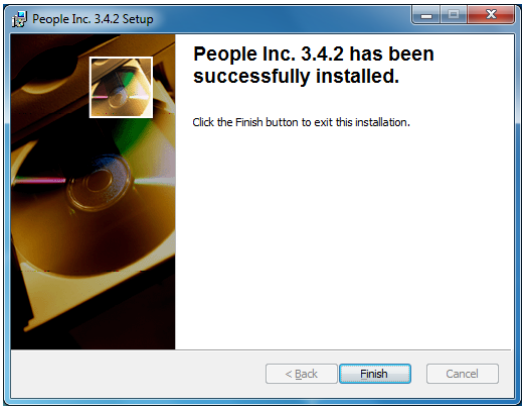
- When SQL Server is a local named instance (this is likely where more than one instance of SQL Server is running) the value entered into SQL Server should be: (local)\<instancename>
- When SQL Server is running as the default instance on a remote computer the value entered into SQL Server should be: <servername>
- When SQL Server is running as a named instance on a remote computer the value entered into SQL Server should be: <servername>\<instancename>

The SMTP Server setting is used to direct SMTP e-mail generated by the People Inc. system. While it is possible to generate e-mail via the user's MAPI e-mail client (for example MS Outlook), the user can choose to send e-mail via an SMTP server. If a user chooses the 'Application Server' option in the e-mail preferences, e-mail generated by the Windows Client will be sent via the SMTP server specified in the Application Server configuration. In addition to this, triggers defined in the People Inc. system send e-mail via this SMTP server.

It is not possible to detect the name of a suitable SMTP e-mail server during installation, so this has to be manually entered. The default value is the IP address of the local machine. Any SMTP mail server can be used and no authentication is used/required when e-mail is sent in this way (so no account is needed on the SMTP server for People Inc.). Note that if the e-mail address in People Inc. user accounts are not from the same domain as the SMTP mail server, security policies set within the server may prevent e-mail from being relayed.

The screen below is shown following a successful installation.

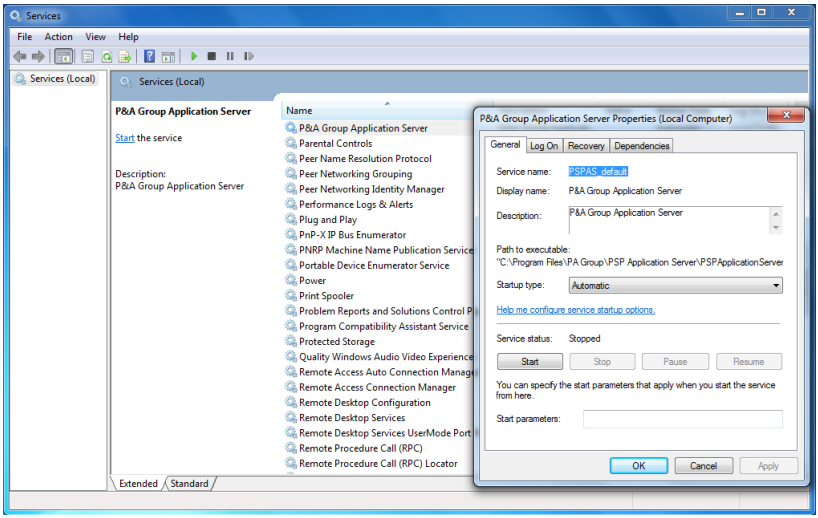
Confirmation of Successful Installation



If the installation cannot find the People Inc. databases running on the database server, it will fail. Normally the issue is either a configuration issue or a security/privileges issue. It is possible to force the installation to complete without validating the connection to the server by selecting 'Do not start server during installation'. The installation will finish and any issues can then be investigated and resolved.

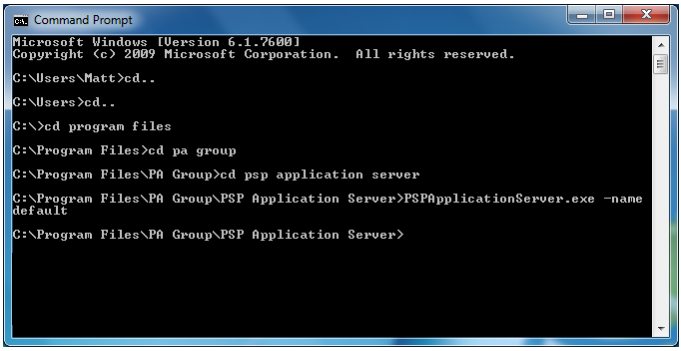
The Application Server runs as a Windows service on the server. If this service will not start, further information can be established if the Application Server is started as a Windows task (from a command prompt). To do this, copy the service command from the service configuration (Path to Executable line):

Application Server Service Properties



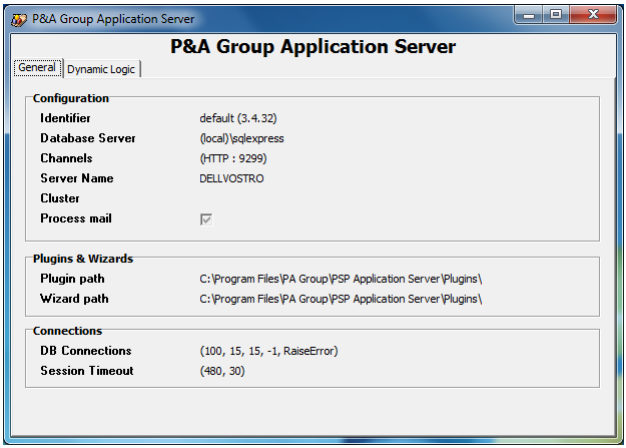
Use this information to run the Application Server from a Command Prompt (see the image below for more details on how to do this). If there is a configuration or communication issue, a full error message will be produced when this is done.

Application Server run from command prompt



When there are no issues with the configuration of the Application Server, it will start (as a Windows task) when run from a command prompt

Application Server (run as a Windows task)

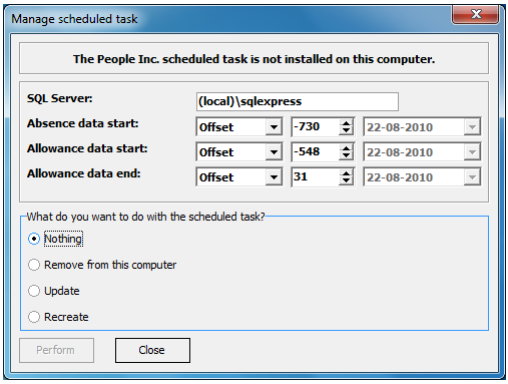


The People Inc. Scheduled Task

Some information in the People Inc. database is calculated from system data. Where these calculations are time-dependent (for example an employee's length of service) the system will run the calculation and update the information daily. This is done using a Windows scheduled task. It is recommended that this scheduled task is installed and run on the same computer as the Application Server (this is done automatically when the Application Server is installed).

The scheduled task can be run as frequently as required. To change the schedule, go to Scheduled Tasks on the computer (from Control Panel), or use the Scheduled Task Management tool (available from the People Inc. folder on the start menu.

Scheduled Task Management Tool



Where a large volume of absence data has been recorded in the database, the scheduled task may take considerable time to run. Users may consider limiting the amount of data that is recalculated by the scheduled task by changing the settings using this tool. For example, by default, 2 years worth of absence records are recalculated (offset is -730 days); if absence from 2 years ago is unlikely to be added to the system, this offset could be reduced.

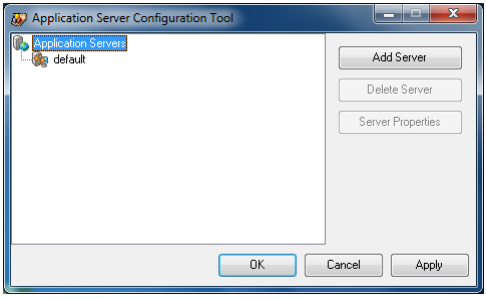
Note that it is also possible to select which databases are recalculated by changing the database access rights in the redsnapperagent profile (see section on user accounts and security). If databases that do not need to be recalculated are excluded, this will reduce the time needed for the scheduled task to run.

If the scheduled task is run on the database server, this will further reduce the time it takes to run. If this is done, the Application server must be installed on this server because the scheduled task uses elements of this software to run. The Application Server service does not however need to be started for the scheduled task to run.

Application Server Configuration

If the correct settings are used during the installation, the Application Server software will be configured to connect to the databases automatically. Once the Application Server is installed, it is possible to change the configuration if required. To do this, run the Application Server Configuration Tool (from the P&A Group menu on the Start Menu).

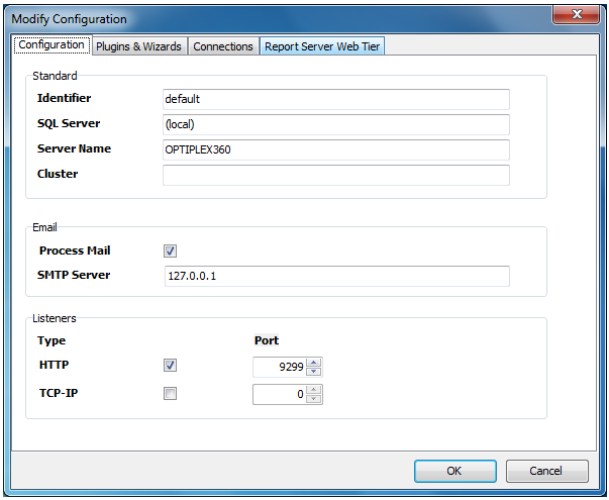
Application Server Configuration Tool



In a standard installation of People Inc. there should only be one entry in this list and it should be called ‘default’. Where the Employee Intranet is also used (and installed on the same server) an additional entry appears for the Web Application Server (called ‘webclient’).

Highlight the default entry and press the Server Properties button. The Application Server properties will be displayed.

Server Properties



The Identifier should be set to 'default'. This is because 'default' is a configuration parameter in the command that starts the Windows service that runs the Application Server.

The name of the SQL Server should be set to match the computer name and instance name of the database server. The image above shows the configuration options that are set if the databases are hosted on the primary instance of SQL Server on the local computer (database and application server are on one computer).

If SQL Express is to be used to host the People Inc. databases, (local)\SQLEXPRESS should be used for the SQL Server.

If the Application Server is not installed on the same computer as the SQL Server or a named instance of SQL Server (or SQL Express) is used, different options will need to be entered in this screen:

- When SQL Server is a local named instance (this is likely where more than one instance of SQL Server is running) the value entered into SQL Server should be: (local)\<instancename>
- When SQL Server is running as the default instance on a remote computer the value entered into SQL Server should be: <servername>
- When SQL Server is running as a named instance on a remote computer the value entered into SQL Server should be: <servername>\<instancename>

It is not possible to detect the name of a suitable SMTP e-mail server during installation, so this has to be manually entered (either during installation or later in the Application Server configuration tool).

If in user e-mail preferences in the PI Windows Client a user has MAPI selected, e-mail the user creates manually will be generated via their desktop e-mail application (most often

this is MS Outlook). If however a user chooses the 'Application Server' option in the e-mail preferences, e-mail generated by the Windows Client will be sent via the SMTP server specified in the Application Server configuration. Note that even when MAPI is chosen in preferences, e-mail generated by the system will use the SMTP server to send e-mail.

Any SMTP mail server can be used and no authentication is used/required when e-mail is sent in this way (so no account is needed on the SMTP server for People Inc.). Note that if the e-mail address in People Inc. user accounts are not from the same domain as the SMTP mail server, security policies set within the server may prevent e-mail from being relayed.

Before this will work, the name of the SMTP server must be set in the PI Application Server configuration (note that where the Web client is also used the SMTP server details also need to be set this separately in the Web Application Server). The 'Process Mail' control should also be checked. To apply these settings, the Application Server service(s) must be restarted (after the settings have been changed).

If there is any doubt with regard to the connection to the SMTP server, this can be tested using Telnet (see knowledge base articles on the Internet for details of how to do this).

The Listeners detailed on the configuration page are used to configure communication between the Application Server and the Client software. It is possible to set a single application server to listen using HTTP or TCP/IP or both. The port selected for each protocol needs to match the port selected in the Client software configuration (see below).

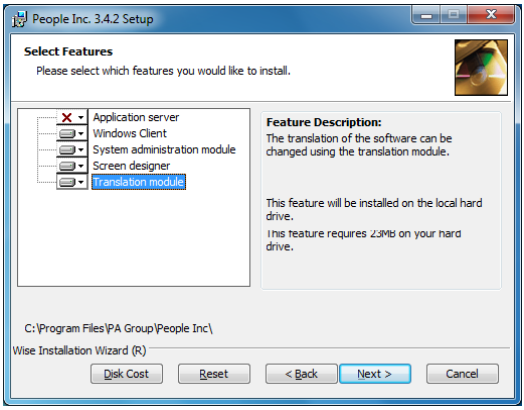
By default, HTTP is selected. It is recommended that this option is used as generally speaking it is faster than using TCP/IP. Some network equipment (bridges and routers) are set to block HTTP; in this case TCP/IP should be used. Citrix is often not configured to use HTTP and again, in this case TCP/IP should be used.

Client Installation

The People Inc. software should be installed on each computer used by the system users (or on a Citrix or Terminal Services server). Please note that it may be necessary to stop the anti-virus software temporarily while this installation is being performed.

On each client computer, run the PSPPeopleInc_3.4.2.msi Windows Installer package located in the People Inc 3.4.2 folder on the CD. This will install and configure the People Inc. client software. The first steps of the installation ask for user details and file locations; we recommend that the default locations are used. The following screen is then displayed:

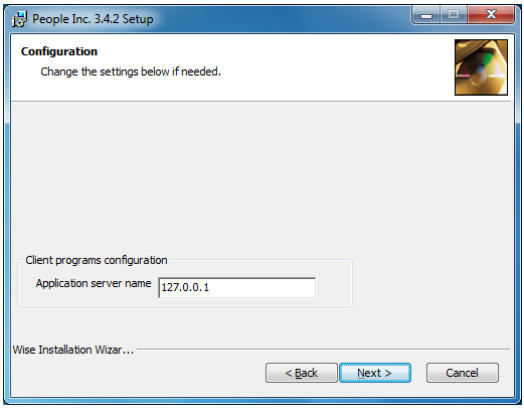
Select Features to Install



De-select the Application Server feature and select the modules appropriate to the current user. Day-to-day users will need the Windows client. Advanced users will need the Windows client, the Screen Designer and System Administration module. If you intend to translate the system into another language, the Translation module will be required.

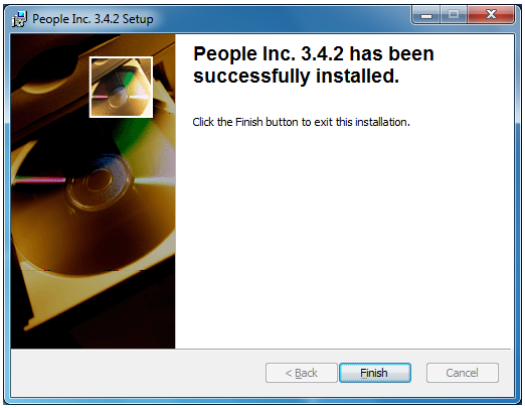
Click Next to continue. Add the name (or IP address) of the server on which the Application Server is running to the next screen. Note that this step is not shown if the Application Server is running on the local computer (Application Server and Client software on one PC). The client software communicates with the Application Server not the SQL Server so there is no need to consider the SQL Server instance in the Client configuration, only the name of the server running the Application Server software.

Select Application Server



The following screen is displayed following a successful installation:

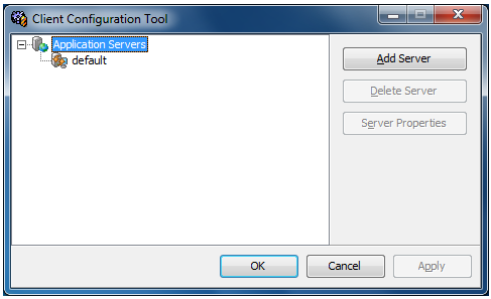
Confirmation of Successful Installation



Client Configuration

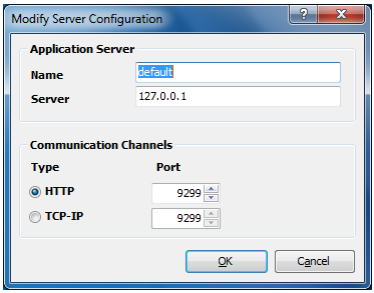
If the correct settings are used during the installation, the Client software will be configured to connect to the Application Server automatically. Once the Client software is installed, it is possible to change the configuration if required. To do this, run the Client Configuration Tool (from the P&A Group menu on the Start Menu). A list of Application Servers will be displayed.

Client Configuration Tool



If the default settings were used during installation, a single Application Server called 'Default' will be listed. If no Application Servers are listed, press the Add Server button. If the entry for the Default Application Server already exists, highlight this entry and press the Server Properties button.

Server Properties



The server properties will be displayed. Ensure that the Server name is correct (it is possible to use either the server name or the IP address of the server). The client software communicates with the Application Server not the SQL Server so there is no need to consider the SQL Server instance in the Client configuration, only the name of the server running the Application Server software.

Check that the communication channel (both type and port) matches the listeners on the Application Server configuration. This image above shows the configuration options that are set if the Application Server is on the local computer.

Parameters for 'Silent' installation

It is possible to perform a 'silent' installation of the People Inc. system. To facilitate this, information that is normally manually entered during the steps of the installation Wizard are provided as installation parameters. This is useful if for example the client wishes to include the software in some form of automated PC configuration. The result of the installation can be reviewed in the Windows event viewer.

The following settings can be set using parameters:

INSTALLDIR

The installation directory for the People Inc. system. The default setting is "Program Files\PA Group".

PRODUCTFOLDER
The directory where the Client programs are installed. The default setting is "INSTALLDIR\[Product name]". This parameter is used by the Client programs.

APPSERVERFOLDER

The directory where the Application Server is installed. The default setting is "INSTALLDIR\PSP Application Server".

SQLSERVERNAME

The name of the SQL Server (and optionally instance) where the database is installed. The default value is "(local)". This parameter is used by the Application Server.

SMTPSERVERNAME

The host name (or IP address) of the SMTP server used for the sending email generated by People Inc. The default value is "127.0.0.1" (the local computer). This parameter is used by the Application Server.

APPSERVERNAME

The host name (or IP address) of the computer where the Application Server has been installed. The default value is "localhost" or "127.0.0.1" dependent on the version. This parameter is used by the Client programs.

APPSERVERPORT

The port used to communicate between the Application Server and Client programs. The default value is "9299". This value should only be changed when it is strictly necessary to do so. This parameter is used by the Application Server and the Client programs.

APPSERVERPROTOCOL

The protocol used for communication between the Application Server and the Client programs (http or TCP/IP). The default setting is "HTTP" (this should only be changed if it is strictly necessary to do so). This must be set to the same value on the Application Server and the Client programs. This parameter is used by the Application Server and the Client programs.

INSTALLDAILYRUNSCHEDULE

Determines whether the daily task is configured using the Windows Task Scheduler - options: "0" (no) and "1" (Yes). The default value is 1. Note that only one copy of the Daily Run should be scheduled and this will only run on a computer on which the Application Server has been installed. This parameter is used by the Application Server.

OVERRIDECLIENTCFG

Determines whether any existing client configuration should be overwritten – options: "0" (no) and "1" (Yes). The default value is 0 (by default, the existing configuration not overwritten). This parameter is used by the Client programmes.

OVERRIDEAPPSERVERCFG

Determines whether any existing "default" configuration for the Application Server configuration should be overwritten – options: "0" (no) and "1" (Yes). The default value is 0 (by default, the existing configuration not overwritten). This parameter is used by the Application server.

SKIPSTARTSVC

No attempt is made during the installation to start the Application Server (service) when this option is chosen – options: "0" (no) and "1" (Yes). The default value is 0. Note that if an attempt is made to start this service during installation, and this attempt fails, the installation will roll-back. So using this option will enable the installation to finish and any issue with starting the service be investigated afterward. This parameter is used by the Application server.

With the ADDLOCAL switch, parameter individual components can be selected for installation. This includes the following components:

- Application_server
- Windows_Client

- System_administration_module
- Screen_designer
- Translation_module

Alternatively, the option ALL can be used to install the Application Server and all Client programs.

Please note:

- Names of directories, features and components are case sensitive.
- Names of parameters (directories and properties) are always uppercase.
- Names of components are exactly as shown above.
- No space before or after equals sign (=)
- A space is required before "/i" and "/quiet"
- The individual components are separated with a comma (do not use a space).

Examples

The following commands can be run from the Windows command line.

Installation of Application Server where the database is installed on "db-srv-01" and the mail-server is at "mail.mycompany.com"

```
Msiexec /i PSPPeopleInc_3.4.2.msi /quiet
ADDLOCAL="Application_server" SQLSERVERNAME="db-srv-01"
SMTPSERVERNAME="mail.mycompany.com" APPSERVERFOLDER="E:\Program
Files\People Inc. Application Server"
```

Installation of client software in which the application server is installed on a server called "app-srv" and communicates on port "10134"

```
Msiexec /i PSPPeopleInc_3.4.2.msi /quiet
ADDLOCAL="Windows_Client,System_administration_module,Screen_designer
,Translation_module" APPSERVERNAME="app-srv" APPSERVERPORT="10134"
```

Install in a specific directory, do not install the scheduled tasks and do not start the application server

```
Msiexec /i PSPPeopleInc_3.4.2.msi /quiet ADDLOCAL="ALL"
INSTALLDIR="D:\Applications\People Inc." INSTALLDAILYRUNSCHEDULE="0"
SKIPSTARTSVC="1"
```

The Application Server is re-installed on a computer (where the application server has been installed previously), and so the configuration should be overwritten.

```
Msiexec /i PSPPeopleInc_3.4.2.msi /quiet
ADDLOCAL="Application_server" SQLSERVERNAME="my-db-srv"
SMTPSERVERNAME="mail.mycompany.com" OVERRIDEAPPSERVERCFG="1"
```

Parameter to REMOVE a module that has been installed. In this example, the Translator is un-installed.

```
Msiexec /i PSPPeopleInc_3.4.2.msi /quiet REMOVE="Translation_module"
```

Tips for Optimising Performance

The response time of the People Inc. system is affected by a number of factors. If performance is an issue, these should be checked. These include:

Performance of the server (database server, application server, web server)

- processor (number, type, speed)
- RAM available
- Utilisation (other unrelated activity on the server)
- Loading on software elements (SQL Server, IIS)

Performance of the network

- speed of the local area network (100Mb/s, 1Gb/s)
- performance at network nodes, routers and other equipment
- speed wide area network connection
- Utilisation of network (other unrelated activity on the network)

Other system software

- security software (firewalls, anti-virus software)

There are a number of things that can be done with the configuration of the People Inc. system itself to try to improve the speed of the system. The affect of these will vary from installation to installation.

Windows client

- Using http rather than tcp/ip will in general improve performance
- Installing the Application Server software on the same physical server as the SQL databases will in general improve performance
- While the Windows application will run across both wide-area and local-area networks, users may wish to compare the performance when Citrix or Terminal server is used.
- If Citrix or Terminal server is used to run the Windows client, installing the Application Server on the Citrix or Terminal server will in general improve performance (this has a greater effect than point 2 in this list)
- Adjusting the configuration of virus scan software may improve performance
- Reducing the default number of data records selected when a screen is opened will improve performance

Web client

- Installing the Web Application Server on the same physical server as the copy of IIS hosting the Web Client (or ESS) will in general improve performance.

Service Packs

From time to time Service Packs for People Inc. are released. These are available from P&A Software (www.pasoftware.co.uk). Service Packs provide the latest functionality and ensure that any known issues with the software are addressed. It is important to ensure that the current service pack is loaded on your system.

When service Packs are applied the version of the software changes. The current version number is displayed at the bottom of the splash screen when the user logs into People Inc. The current version of an installation of People Inc. can also be found by checking the version of the People Inc. executable file (it is also given on the Help About screen displayed from the systems main menu once logged into the system).

Before applying a service pack, the user must check that the service pack can be applied to the version of the software they currently have installed. If a number of service packs have been created since the system was installed, it may be necessary to apply these service packs in order. Applying a service pack will not affect existing data; however, it is recommended that a backup be taken prior to loading service packs.

Service Packs are installed by double clicking on the installation file on the CD (for example PI_EN_SP_342.exe). Unless instructed to do otherwise, users should use the default options when applying service packs. Note that the SQL Server system administrator account (SA account) password may be required when Service Packs are applied.

Managing Wizards

This sections details the steps needed when installing new Wizards (or plug-ins). When installing a plug-in, replace the word Wizard, for Plug-in, throughout this document. Note that there may be specific instructions associated with the installation of a particular Wizard or plug-in (for example the Absence Calendar Plug-in). These will be provided in a separate document as required.

Installation and Configuration.

To install and configure a Wizard is a 3-step process.

- Add the dll file to the system (both on the Application Server & on the users' PCs)
- Register the Wizard
- Enable the Wizard

Add the Wizard dll file to the system

A copy of the .dll file must be placed into the plug-ins folder (on the computer that runs the Application Server). In a default installation, this folder is:

C:\Program Files\PA Group\PSP Application Server\Plugins

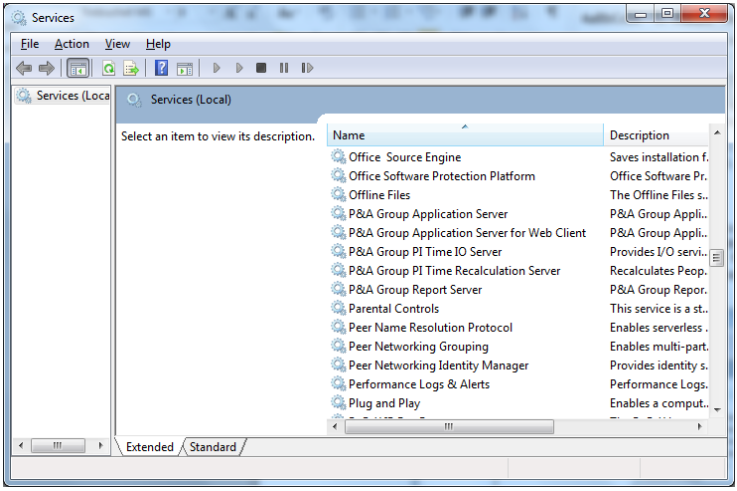
Please note there are two folders for Plug-ins in the PSP Application Server folder: one for client plug-ins and one for application server plug-ins. The files should be placed in the Plugins folder (for the client) and not the Application Server Plugin folder.

Further copies of the same Wizard dll file must also be placed in the plug-ins folder on each of the client PCs (the PCs the users use to access the system). The default location for this folder is:

C:\Program Files\PA Group\People Inc\Plugins

Note that if the files already exist (i.e. the new wizard is a replacement for an existing Wizard) it will be necessary to stop the People Inc. Application Servers before the file is added. In this situation, we recommend that the existing file is renamed rather than deleted. This will enable the user to revert to the original version if they wish. The Application Servers run as Windows services.

Application servers in Services screen

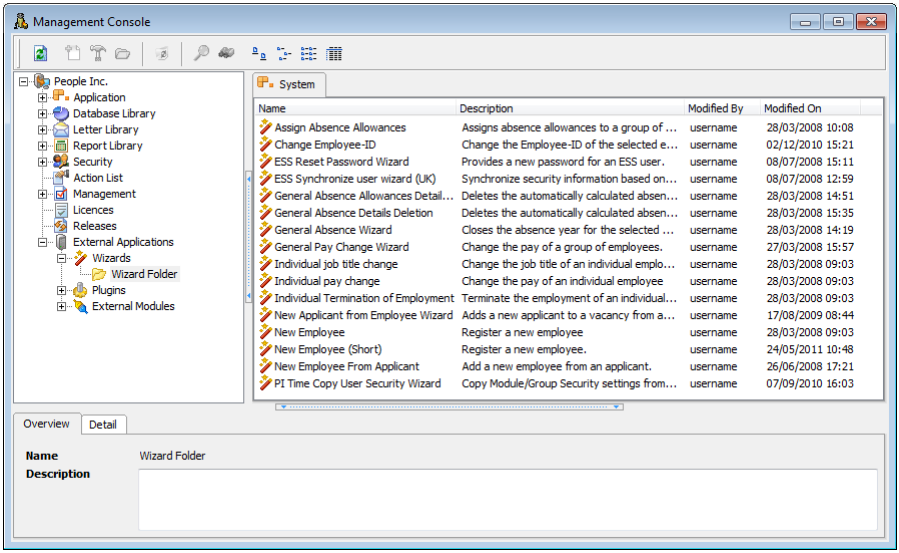


The image above shows 4 application servers. Users may have just one application server (P&A Group Application Server); if they have the Employee Intranet (ESS) they will have an additional application server (P&A Group Application Server for Web Client). If they have People Inc. Time they will have 4 application servers. It is normally only necessary to stop the P&A Group Application Server before replacing a Wizard. This should then be re-started once the Wizard is replaced.

Register the Wizard

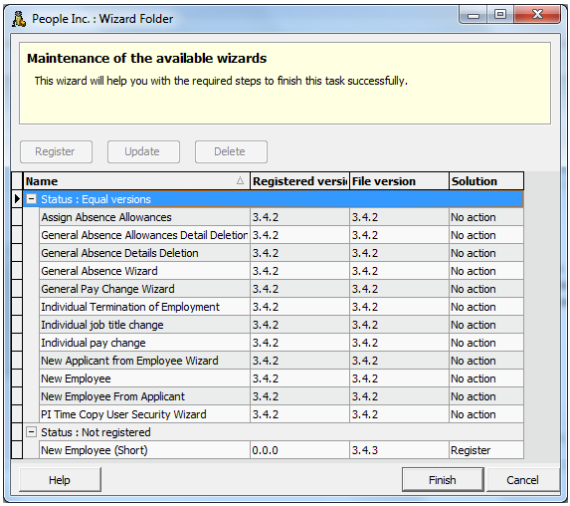
The System Administration module can be accessed via the start menu. In the System Administrator, Select External Applications, Wizards

Application servers in Services screen



Right-click on the Wizards folder, then select All Tasks > Wizard Maintenance; the Maintenance dialogue is displayed (see below).

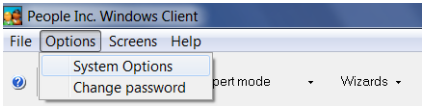
Wizard Maintenance



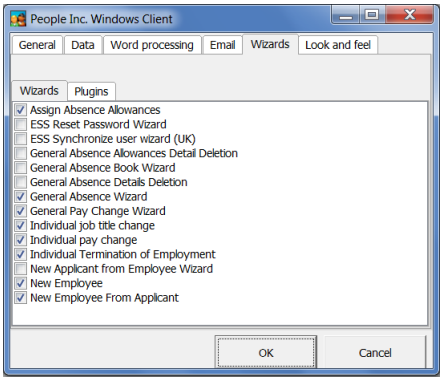
The new Wizard will have a Status of 'not registered'. To register the Wizard, click once on the Wizard in the 'Not registered' list, and click the Register button. The Wizard will move to the 'Equal versions' list.

Enable the Wizard

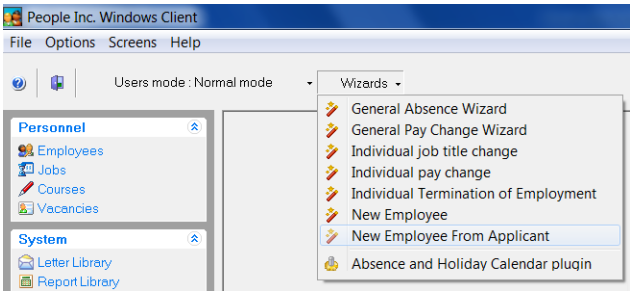
The final step is to enable the Wizard in the People Inc. Windows Client. Click on Options > System Options.



A new window will open up and select the Wizards tab. From here, users can select the Wizards they wish to display in the Wizards drop down list.



To run a Wizard, select it from the Wizards drop down list (see below).



5. System Licences

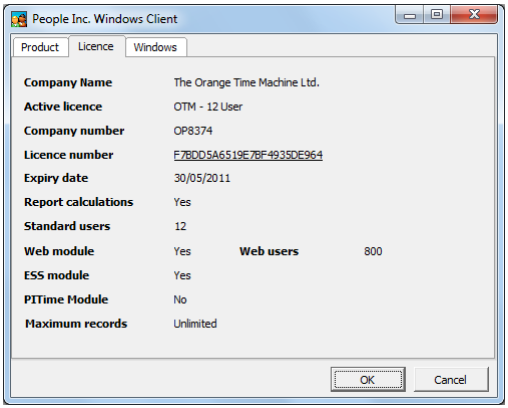
Overview

System licenses are issues to People Inc. clients (one license per system). People Inc. licenses control user access to the various elements of the People inc. system (for example, the screen designer, the reports calculation tab, the web client and the ESS functionality). The licence also dictates the maximum number of concurrent Windows users, the maximum number of Web users and the expiry date.

End users should ensure that they have a valid license for their system. A valid license will include the user's company name. Details of the license can be found in the Help > About screen, and are displayed at start-up on the 'Splash' screen. In particular users should note that 'not-for-resale' licenses are not valid and should not be used. Users should contact their supplier or P&A Software for a replacement if they do not have a valid license.

The full licence details can be displayed in the People Inc Administration Module. Licence details can also be viewed from the Help About screen (accessible from the main menu).

License Details in Help About screen



The People Inc. installation CD installs a system with an evaluation license; this license will provide full access to the system for 60 days. When the evaluation licence expires, no data is lost; however, users will not be able to access the system until a full licence is registered within the system.

When a system is purchased with a full licence, the supplier will agree to implement the system on a particular date (this date will appear on project documentation and on maintenance invoices), the supplier can request a temporary license from P&A Software (that expires 60 days after this implementation date). This gives the user time to complete the implementation, address any issues and process the supplier's invoice. Once again, when the licence expires, no data is lost however, users will not be able to access the system until a full licence is registered within the system. A licence that covers the remaining 10 months of the first year will be provided once the supplier's invoice is paid.

All full end-user licenses expire after 12 months and have to be renewed. This is done on the anniversary of the initial implementation date. Renewal invoices are generated automatically, 60 days before the license expiry date. As users approach the end of the license period, they are warned that the license is about to expire. If at this point the user has not received a new license they should contact their supplier. Once a license has expired, users will no longer be able to access the system (until a new license is added). Users can however access the System Administrator tool (this enables them to add new licenses).

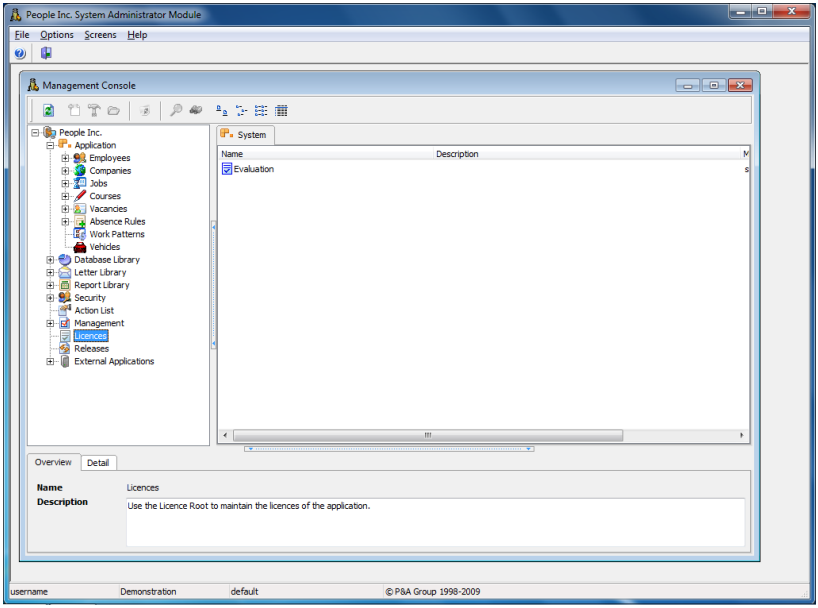
Managing Licenses

Licenses are managed, and new licenses added using the System Administrator. The System Administrator can be started from the P&A Group program group on the Start Menu. Access to the System Administrator is gained via the same login dialogue and user account details as are used for the People Inc. system itself. Note that the System Administrator is an optional component that may not be installed, and that not all users will be granted access to this module (this depends on their security profile).

Adding a Licence

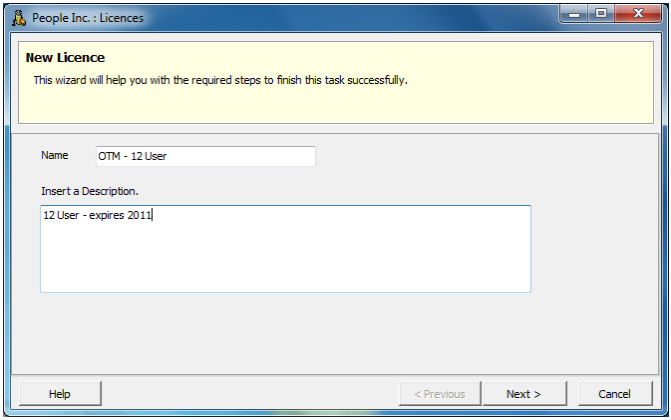
A new license file is normally sent via e-mail; this should be saved onto the PC. Additional licences can be loaded into People Inc and activated as required. Any number of licences can be loaded into the system; however, only one licence is flagged as the active license at any point in time. New licenses are added to the system using the System Administrator module.

System Administrator



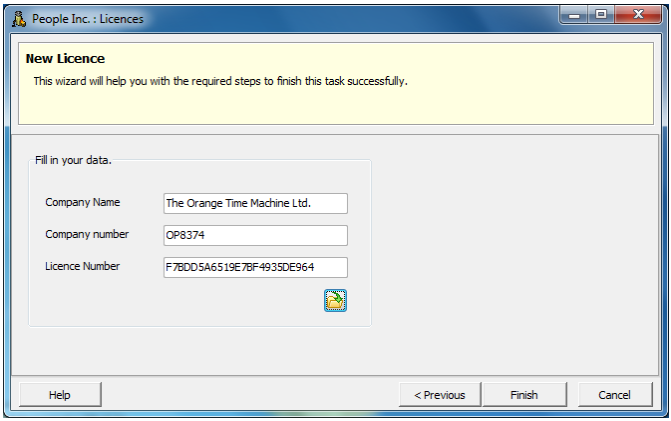
Right-click on the Licence node in the Management Console, and select New, New License. In the first step of the wizard, provide a name for the license. Any name can be used for your new licence providing it has not been used already.

Adding a New License – step 1



In the second step of the wizard locate the license file received from your supplier (use the icon with the yellow folder to open the file dialogue). Double-click the file to select it.

Adding a New License – step 2

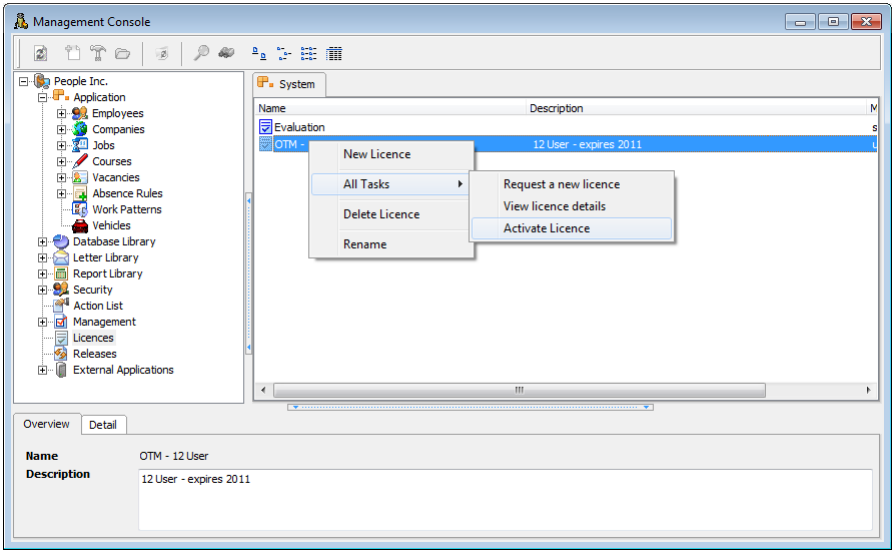


Click Finish to save the license.

Activating a Licence

If more than one licence is loaded into a copy of People Inc, it is possible to choose which licence is the active licence. To activate a license, right-clicking on the entry for the licence in the management console, and selecting All Tasks, Activate License.

Activating a License

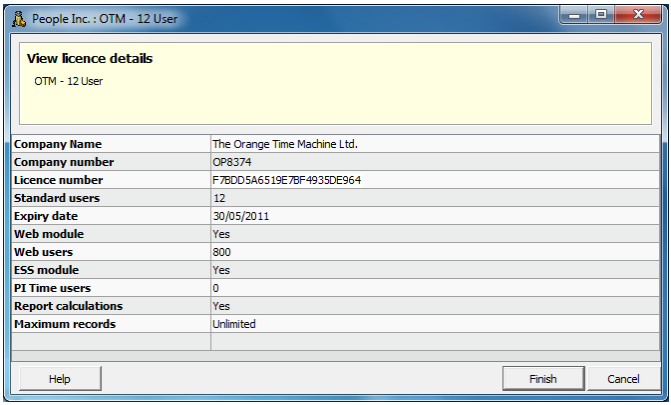


The active license is displayed with a blue icon in the management console.

Viewing Licence details

To view details of a licence in the system, right-click on the entry for the licence in the management console, and select All Tasks, View License Details.

View licence details



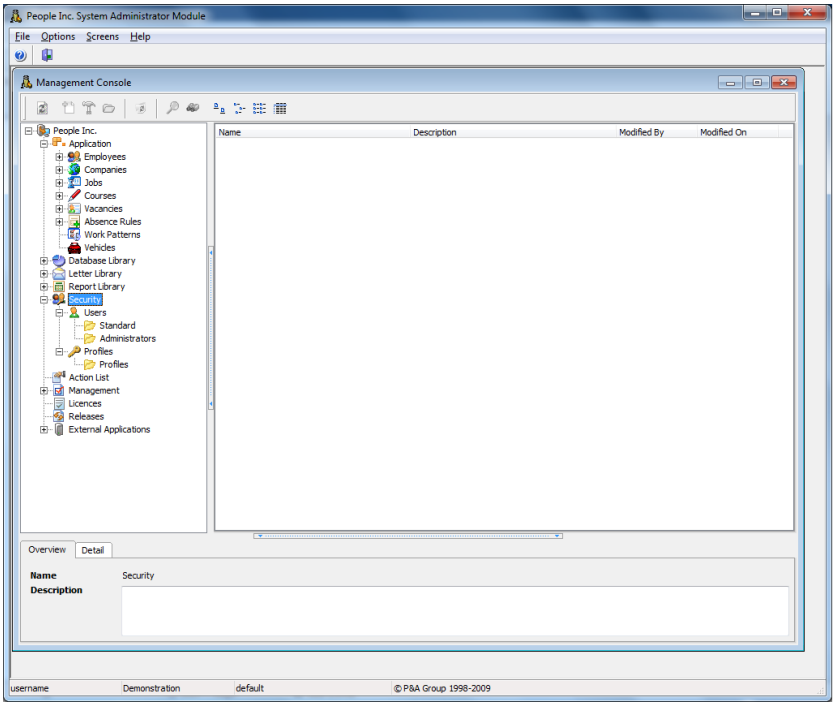
6. User Accounts and Security

User profiles

Users access People Inc. using a user account defined for them within the software. Each user account has a unique username and password. When the system is first installed, only the default user account is defined. This default account has the username: *username*, and the password: *password*. Any number of additional user accounts can be configured within the People Inc. system. Note that the active system licence controls the number of users who can access the system concurrently.

The System Administrator is used to add new users. The System Administrator can be started from the P&A Group program group on the Start Menu on your PC. Access to the System Administrator is gained via the same login dialogue and user account details as are used for the People Inc. system itself. Note that the system Administrator is an optional component that may not be installed, and that not all users will be granted access to this module (this depends on their security profile).

System Administrator screen



While a user account is needed to gain access to the system, the scope of a user's access is managed via user access profiles. These are also defined using the System Administrator. To achieve this, each user account is associated with one or more profiles. Access rights are set within these profiles and apply to all user accounts associated with the profile. In this way, it is possible to control access to all aspects of the People Inc system, including:

- Databases
- Screens (and associated information)
- Screen Elements (and associated information)
- Individual Filter, Letter Template and Report Template definitions.
- System Functions (screen design, system administration module, etc.)
- User Access via the Web Client or Employee Intranet

Note that the same user-profile controls access via the People Inc. windows software and the Web Client. This means that a user (or group of users) will be granted access to exactly the same data and resources regardless of the software they use to access the system.

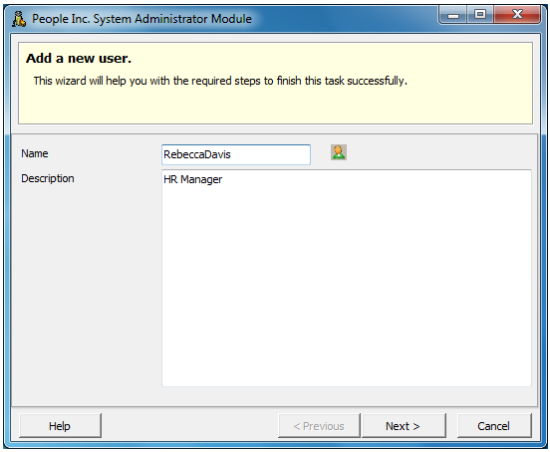
User Account and User Profile Folders

Expand the Security folder in the Management Console (within the System Administration Module). The Security folder contains a Users folder and a Profiles folder. It is possible to have any number of sub-folders that can be used to organise user accounts and security profiles. By default a folder is provided for Administrator accounts and another for Standard accounts. To create a new user folder, right-click on an existing folder and select New User Folder or New Profiles Folder. It is also possible to rename and remove folders.

Creating User Account

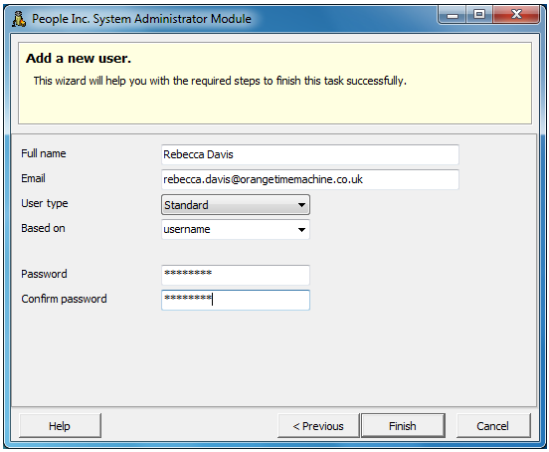
User accounts are defined within the user folders within the Management Console Security node. Note that any user account can be stored in any users folder; there are no specific rights automatically assigned to user accounts by placing them in a particular folder. To create a new user account, right-click on a Users folder and select New > New user.

Add new user wizard



The second step of the wizard enables users to specify further user details. The user's name and e-mail address is also recorded. These are used to send e-mail from People Inc.

Add user details



It is possible to base a new user account on an existing user account. The same security settings are the used for the new user account. To do this, the new user is granted access to the system via an existing user profile. Furthermore, when a new account is based on an existing account, the user preferences (set by the user within the People Inc system itself; see the Getting Started section of this user guide) are copied from the existing user account to the new account. This can save the new user time when they first use People Inc.

If a new user account is not based on another user account, a new user profile is created and the access rights need to be set manually. Furthermore, when an account is created in this way, the user preferences (set by the user within the People Inc system itself) need to be set manually within People Inc.

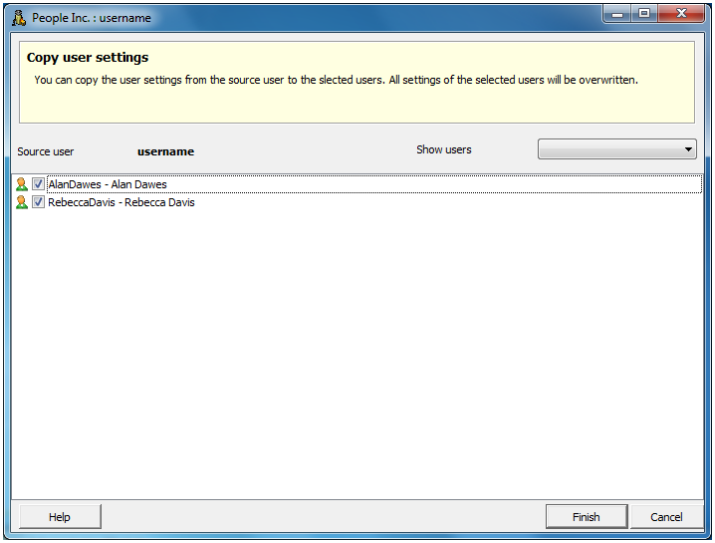
Resetting User Passwords

From time to time, users may forget their passwords. Password can only be reset in the System Administration Module (however users can change their own password when logged in to People Inc.). To reset the password for a particular user, right-click on their user-account and select All Tasks > Change password. Follow the steps detailed in the Wizard.

Copy User Settings

It is possible to copy the user settings from one account to a number of other accounts using the system. This is useful when a group of user accounts all need to be modified in the same way (rather than change each account one-by-one). To do this, right-click on the user account that has the correct settings and choose All Tasks > copy User settings. In the dialogue that is displayed, ensure that only the entries associated with the accounts that need to be modified are selected.

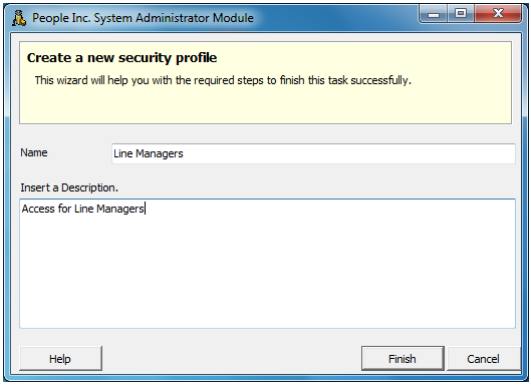
Copy User settings



Creating Security Profiles

Security Profiles are defined within the profiles folder in the Management Console Security node (in the System Administration module). These profiles define the access rights grated to users. To create a new security profile, right-click on a profiles folder and select new security profile.

Creating a new security profile



After specifying the name of the profile, the Configure User rights screen will be shown.

Configuring User Profiles

The Configure User Rights screen is displayed automatically when a new profile is created. It is also used to modify existing profiles. To view or modify the details of an existing user profile, click on the profiles folder and right-click on the profile and select All Tasks > Manage Security Profile. The Configure User rights screen will then be displayed.

The Configure User Rights screen has a number of sections. Each of these sections is used to manage user access to that part of the system.

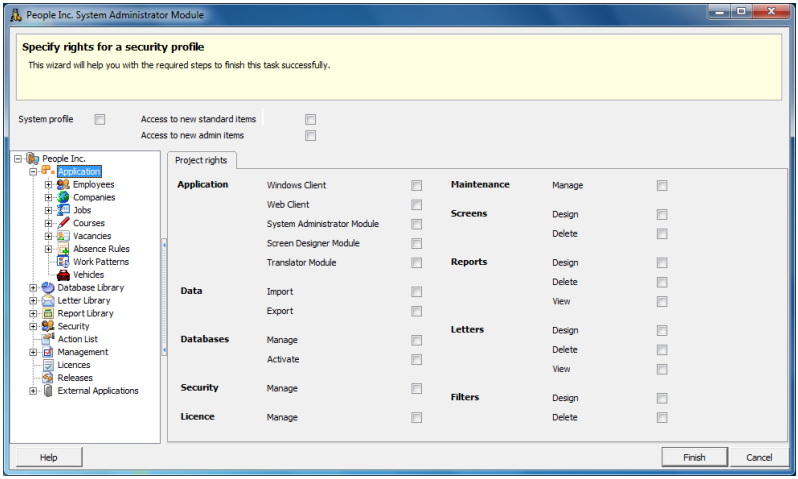
At the top of the screen there are a number of options. All profiles used with user accounts should be 'System Profiles'.

If accounts using the profile in question are to be granted access to any new letter templates, report templates and filters that are added to the system (automatically, when they are added) the 'Access to new standard items' option should be selected. Generally speaking this is not a good idea for users with restricted profiles.

If accounts using the profile in question are to be granted access to any new wizards, plug-ins and databases that are added to the system (automatically, when they are added) the 'Access to new admin items' option should be selected.

The Application node enables users to manage access to the various software tools supplied with People Inc. (see image below). This enables administrators to restrict the access of users as required.

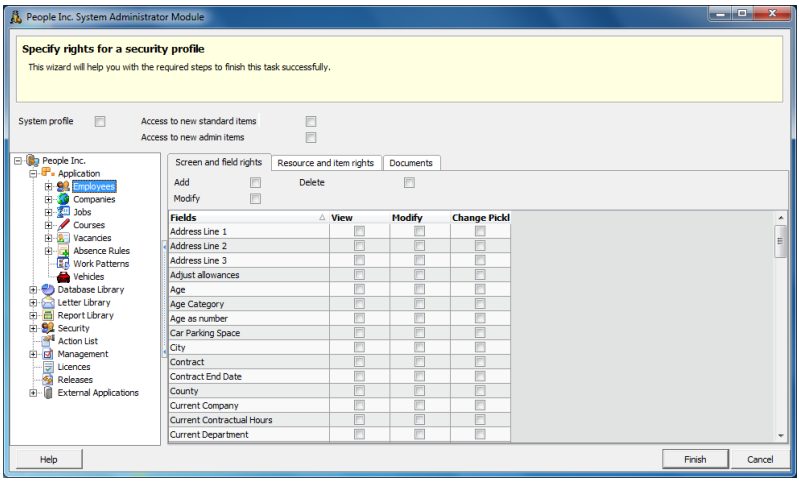
Configure User Rights



Within the Application Node, each screen (and all sub screens) is displayed (see image below). Selecting an element in the People Inc. tree on the left hand side displays the detailed security information for that element for the current profile on the right hand side.

Rights to a particular field resource (letter report), range of data (filter) or function can be set in this screen. This is done by checking (or un-checking) the appropriate check-box in this view. Users can grant or deny user-permissions to a complete row or column by double clicking the column or row header. When an entire row or column is changed, the new rights set are to the opposite of the original value as defined in the first cell of the row (or column).

Configure access to data screens

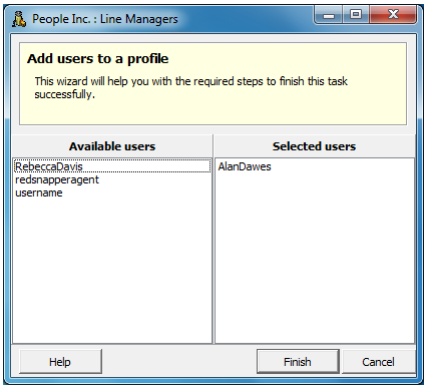


Associating Security Profiles with User Accounts

When a user account is added to the system, it is automatically associated with a user profile. This will either be a new profile created for that user, or where a new account is based on an existing user account, it will be the profile that was associated with the existing user's account.

Any number of user accounts can be associated with a security profile. If a security profile is changed, the access rights for all associated users are automatically updated. To check the users associated with a particular profile right click on the security profile and select Add to Security Profile. The Add to Security Profile Screen will be displayed.

Add user to security profile screen

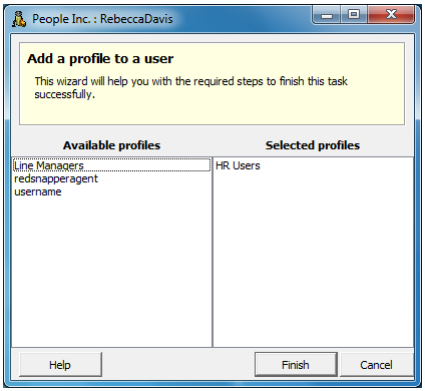


A list of available users will be displayed in the panel on the left. The panel on the right shows a list of user accounts which are currently associated with the security profile. Double clicking on a user account will move them from one list to the other. Select Finish to save any changes.

It is also possible to list the profiles associated with an individual user account by right-clicking on the user account definition and selecting All tasks > Member Of. The manage security membership screen will be displayed. A list of available security profiles will be displayed in the left panel. The right panel will list the security profiles currently associated with the user accounts. Double clicking on a security profile will move it from one list to the other.

Note that a user can however access the People Inc. system via a single access profile or via a number of access profiles at the same time.

Grant access via security profile to user



Restricted Access

Where a restricted user profile is configured within the system it is important that the user thoroughly checks the scope of the profile before users are granted access. For example, if a profile denies access to some of the information within the database, the profile should also stop users from creating or amending filters (otherwise they can change these and access data they are not authorised to see); if a user is not allowed to see pay details, they should not be allowed to see reports (or letters) that have pay detailed in them and should not be allowed to change or add reports (or letters).

Unauthorised Access

Before information about your employees is added to the system, the username/password user account should be disabled (by ensuring that it is not associated with any of the access profiles defined in the system), or the password should be changed.

Deleting User Accounts

When a user leaves or no longer requires an account, the account can be removed from People Inc. To delete an account, right click on the user-account definition and select Delete User. Follow the steps in the Wizard. Once deleted, a user account cannot be un-deleted.

7. Managing ESS User Account Access

Employee and Manager access to the Employee Intranet

The characteristics and scope of individual user accounts is managed using a combination of preferences and access profiles:

- Preferences are set by logging into the Windows client (using the account in question) and setting the various options available. For example, the filter that is applied to a screen by default, or the selection and order of columns displayed in overview mode (list mode).
- Access rights to screens and other resources are granted or denied via access profiles; these are managed using the System Administrator. These include screens, fields, reports and letters as well as data-related restrictions (e.g. show only absence of category 'Holiday').

The same settings are associated with an individual user account irrespective of the software used to access the system. This means that the user will be provided with access to the same information, in the same way, irrespective of whether they log in via the People Inc. Windows client or the Employee Intranet (ESS). Note also that the characteristics and scope of other user accounts (accounts not associated with the Employee Intranet) are managed in exactly the same way.

Employee Intranet User Templates

Employee Intranet user accounts are created from pre-defined template user-accounts. Manager accounts are created from a template account called 'Manager'; employee accounts are created from an account called 'Employee'. Individual accounts inherit preferences and access profiles from these template user-accounts. The Synchronise ESS Users Wizard is used to create Employee Intranet user accounts (based on settings in the ESS Configuration and the Job History screens).

Users should ensure that the template accounts provide a suitable level of access and have suitable preferences set before they create ESS user accounts for employees and managers. Once user accounts have been created the access profile can be adjusted globally (for all employee accounts or all manager accounts) by adjusting the appropriate access profiles in the System Administrator. However, it is more difficult to adjust the preferences for these groups of users.

If global changes need to be made to preferences for either all employees accounts or all manager accounts, the changes can be made to the template user-accounts and them passed on to all derived users accounts (by re-running the Synchronise ESS Users Wizard). But before this is done, access to the Windows client will need to be granted to the appropriate template user-account. The simplest way to do this is to make the template user-account a member of an unrestricted access profile (in a new system there is an unrestricted access profile called 'username').

Having granted access to the system via an unrestricted profile, log into the People Inc. Windows application using username and password combination employee/employee or manager/manager. User preferences can then be set. When setting preferences, care should be taken to ensure that filters that are selected as default filters are accessible via the access profile normally associated with the template user account (for the manager

template user account the access profile is called manager; for the employee template user account the access profile is called employee).

Once the preferences are set, care should be taken to deny access to the Windows client for the template user account (to ensure robust system security). The Synchronise ESS Users Wizard should then be run, selecting the 'Reset user settings for all users' option.

Note that by default, the template user-accounts are called 'Employee' and 'Manager' and that by default these are associated with access profiles called 'employee' and 'manager' respectively. It is however possible to change these defaults (this is done in the ESS Configuration screen.)

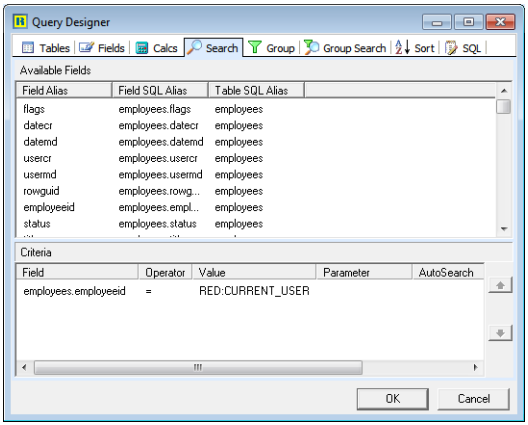
Granting Access to a new field, report or letter

If a new field, report template, letter template or filter is added to the system it will not be accessible to Employee Intranet users (managers or employees). This is by design; these users are not granted access to new resources automatically. To grant access for all managers/employees to the new resource, take the following steps:

- Define the field, report, letter or filter via the Screen Designer or the Management Console.
- Grant access to the field, report, letter or filter to the manager or employee access profile, taking care to grant read-only access if appropriate.
- Log in to the Employee Intranet using a manager or employee user account to test that access has been granted.

Important note: Reports can be set up to allow a user to define a search criteria at run time. This provides users with greater flexibility than hard coding search criteria into the report. This feature may be used to view unauthorised information if reports are made available to employees or managers to via the ESS. To ensure that this cannot happen, reports that are published via the ESS that show employee information should be filtered using the RED:CURRENT_USER function (and the AutoSearch facility should be disabled).

Query Designer



Changing Screen Preferences for Existing Screen

If the preferences for an existing screen need to be changed for Employee Intranet users (managers or employees), take the following steps:

- Ensure that any new filter is accessible to the manager or employee access profile, taking care to grant read-only access if appropriate.
- Grant access to the People Inc. system for the employee or manager template user-account via an unrestricted access profile (using the System Administrator)
- Log into the People Inc. Windows client with the employee or manager account (username: employee, password: employee or username: manager, password: manager)
- Set the desired filter as the default filter for the screen; change the selection and order of columns displayed in the data-screen overview mode (if needed).
- Log out
- Remove the access profile added to the employee or manager template user account (neither of these accounts have access to the system via an access profile; there should not be any profiles associated with these template user-accounts).
- Run the Synchronise ESS User Accounts Wizard selecting the 'Reset user settings for all users' option.
- Log in to the Employee Intranet using a manager or employee user account to test that access has been granted.

Granting Access to a New Screen

If a new screen is added to the system it will not be accessible to Employee Intranet users (managers or employees). This is by design; these users are not granted access to new resources automatically. To grant access for all managers/employees to the new screen, take the following steps:

- Define the new screen using the Screen Designer
- Define a filter for the new screen (using the Management Console in the People Inc. Windows client)
- Grant access to the screen and the filter to the manager or employee access profile, taking care to grant read-only access if appropriate.
- Grant access to the system for the employee or manager template user-account via an unrestricted access profile (using the System Administrator)
- Log into the People Inc. Windows client with the employee or manager account (username: employee, password: employee or username: manager, password: manager)
- Set the filter as the default filter for the new screen. Change the selection and order of columns displayed in the data-screen overview mode (if needed).
- Log out

- Remove the access profile added to the employee or manager template user account (neither of these accounts have access to the system via an access profile; there should not be any profiles associated with these template user-accounts).
- Run the Synchronise ESS User Accounts Wizard selecting the 'Reset user settings for all users' option.

Log in to the Employee Intranet using a manager or employee user account to test that access has been granted.

8. Importing Data

Overview

It is possible to import data into the People Inc. database. Users can save time by importing data rather than typing it in via individual data screens. For example, when setting the system up, if a spread sheet listing employees and their addresses exists, this can be imported into the database in minutes rather than taking time to type each entry.

Existing information (in the People Inc. database) can also be updated using the data-import functionality; however, care must be taken to ensure data is not over-written and lost when updating data in this way.

People Inc. imports data screen-by-screen (it is not possible to import data into more than one screen at the same time) and uses data-import templates to control the behaviour of each import. It is possible to define any number of data-import templates. Once a template is defined, it can be saved and re-used as required. This is useful if the same data is to be imported into the system on a regular basis (for example every month from a payroll system). If necessary, it is possible to modify existing templates to reflect changes in the format of source data.

Before data can be imported, it is important to understand details of the structure of the People Inc database. Related data may be stored in 2 linked tables rather than in a single screen. In this case 2 separate imports will be required.

System Backup

As the changes made in the data when importing information can be extensive and are irreversible, a backup should always be made of the entire system (ideally using the back-up feature provided within People Inc.) before importing data. Restoring a back-up may be the most effective way to undo changes to data that have been made in error.

People Inc. Data structure

The data recorded within People Inc. is stored in data tables. There are 2 types of data table, parent tables and child tables. Parent tables contain data that can be recorded independently for (for example details of employees or details of vacancies). Child tables contain data records that are each related to a record in a parent table. There will normally be more than one child record in the database for each parent record (for example, records detailing the job history for a particular employee).

In both cases each record (or entry) in a particular table is made up of exactly the same fields (or items). For example, an employee table may contain records that all have: an employee forename, surname, home telephone, etc. Note that in People Inc, if necessary, the structure of the records can be changed (by adding fields using the screen design functionality) to accommodate additional information. When this is done, the structure (list of fields) is changed for all records in the table.

Every record must have a primary-key field. This field has a unique value (for each record) and is used by the system to identify the record. For parent tables this is a simple concept: there is a single field that contains the primary key field. For example, each entry in the employee screen has a unique value recorded in the ‘employeeid’ field. This is system

generated and not normally displayed on the employee screen. Once it is set, it cannot be changed.

In child tables it is slightly more complex. Each record in a child table has its own unique primary-key field; when listing all the absence records for all the employees, each absence record can be uniquely identified using just the contents of this primary key field. But each record is also associated with a specific record in a parent table (the employee table), and so the primary key associated with a record in the parent screen is recorded in another field in the child-table. An absence entry for a period of absence for an employee will therefore have 2 key fields: one will contain the value of the employees unique primary key field (employeeid), the other will contain a primary key that is unique to that particular absence entry (no other absence entry in the system will have the same value in that field).

By convention (in People Inc databases) primary key fields have the same name as the database table, followed by 'id'. For example, in the employee table, the primacy key field would normally be called 'employeeid'. The primary key field is normally a text field, with a maximum of 15 characters.

Preparing Data for Importing

To import information into People Inc, the data must be recorded in a text file. Where information is currently in a database or spreadsheet, it will need to be converted to text-file format before it is imported.

Each entry (row) in the text-file should contain all the information about an individual record, and each entry should have exactly the same format (the order and layout of information should be identical).

A field delimiter character must separate the fields in the text file. This is normally a <tab> character or a comma, but other characters can be used if required. Note that the character chosen as a delimiter should not appear elsewhere in the data.

All text in the data should be encapsulated in quote-marks and there should not be any spaces between entries. Note that the data itself should not contain quote-marks.

Before they can be imported into the system, all dates must be formatted in the following way: YYYY-MM-dd (for example, 21st June 2011 should be "2011-06-21"). Using the '/' character as a date character will generate an error on import.

It is preferable for the text-file to include field headings. The field headers are added in the first row of the file and have the same layout as the data in the file (see example below). Including headings in the file simplifies the configuration of the import template.

It is likely that some data in the database is generated (or validated) based on rules defined within the People Inc. system itself. There are many examples of this in the standard configuration of the system (this type of functionality is configured using the screen designer). When importing data none of the rules set by data-validation or calculations defined in the screens is enforced (and it is not possible to force the system to validate or calculate the data globally following data import). Users must therefore make themselves aware of any calculations and data-validation defined in the screen they are working with and make sure that the data they are working with is already consistent with these before it is imported.

Example Text for Import

The following example text might be suitable for importing into the employee table in People Inc.:

```
"Employeeid","Surname","Firstname","E-mail"
"334-DD35","Jones","Mary","m.jones@pasoftware.co.uk"
"624-DE42","Smith","David","d.smith@pasoftware.co.uk"
"295-DJ62","White","Peter","p.white@pasoftware.co.uk"
"465-DG82","Greene","Ellen","e.greene@pasoftware.co.uk"
"611-DJ47","Black","Kelly","k.black@pasoftware.co.uk"
"755-DE12","Stevens","Kate","k.stevens@pasoftware.co.uk"
"175-DE68","Dalton","Mark","m.dalton@pasoftware.co.uk"
"837-DL11","Taylor","Sarah","s.taylor@pasoftware.co.uk"
"922-DG17","Richards","Graham","g.richards@pasoftware.co.uk"
"418-DD96","Faulkner","Jane","j.faulkner@pasoftware.co.uk"
"287-DA78","Hepworth","David","d.hepworth@pasoftware.co.uk"
```

The example text shows data for eleven employee records. The first field in each line is the primary key field, followed by surname, first name and e-mail address. Note that each row in the file has exactly the same fields, in the same format and sequence.

A data-import template will match the information in the text-file to fields in the database. For the example above, the template would specify that data will be delimited with a comma, and the text encapsulated in double-quotes (double-quote is the text qualifier), and that the data should be imported into the employeeid, the Surname field, the First Name field and the employees E-mail field.

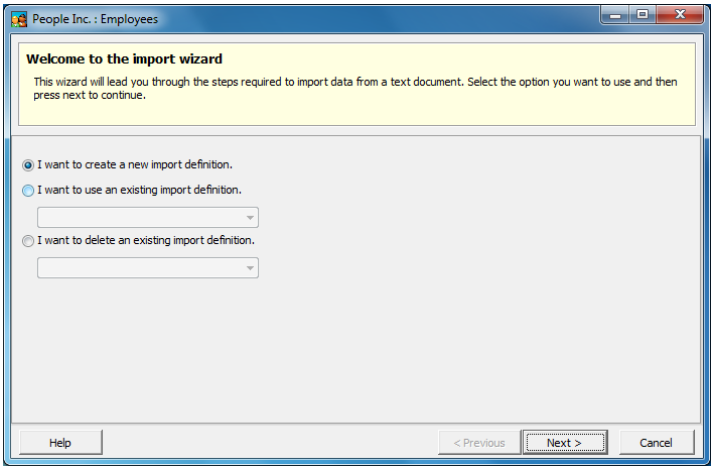
The template will also specify what the import should do if it finds duplicate data in the database. For this there are a number of options (see below). These options enable the user to either add new data to the system, or to update existing data.

Working with Import Templates

To begin importing data, right-click on the node for the appropriate screen in the Management Console (the screen into which data is to be imported) and select all tasks, import data.

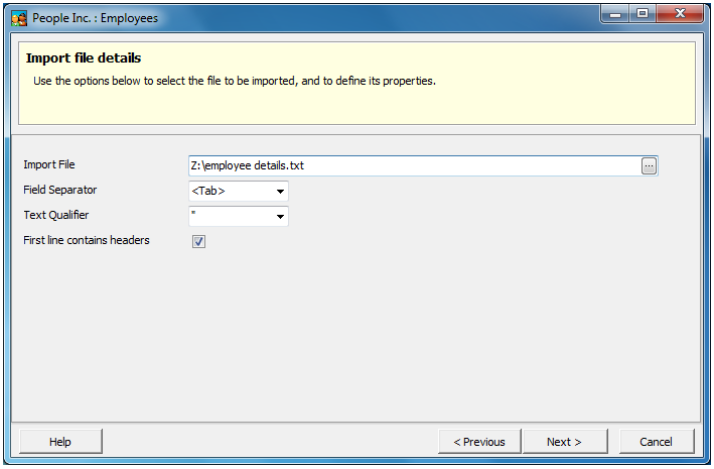
The data import Wizard is started. If the data import has never been done before, in the first step of the data import wizard the user should select the option to create a new import definition.

Import data



The Wizard then asks for details of the import file.

Import File Details



This dialogue requires 4 pieces of information:

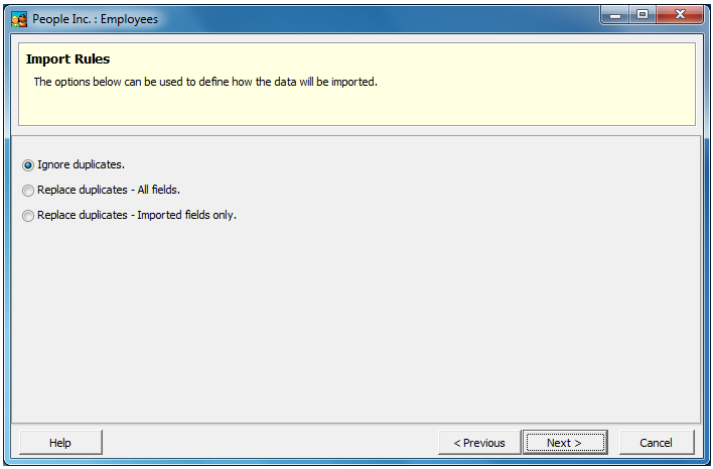
- Import File - enter the path and filename of the import file. Alternatively locate the file that you want to import by clicking first on the button on the right of the Import File box. Double-click the file to select it.

- Field Separator - the separator used to separate fields in the import file. Select the appropriate field separator character from the drop-down list.
- Text Qualifier - the qualifier used to encapsulate text strings in the import file. Select the text qualifier character from the drop-down list.
- First Line Contains Headers - if the first row of the import file contains headings, click the checkbox.

An import rule is selected in the next step in the Wizard. This enables the user to specify how People Inc handles duplicate records. A duplicate record is identified when the import utility finds 2 entries with the same value for the primary key field. If a record already exists with the same primary key as a record about to be imported, the template can be configured to:

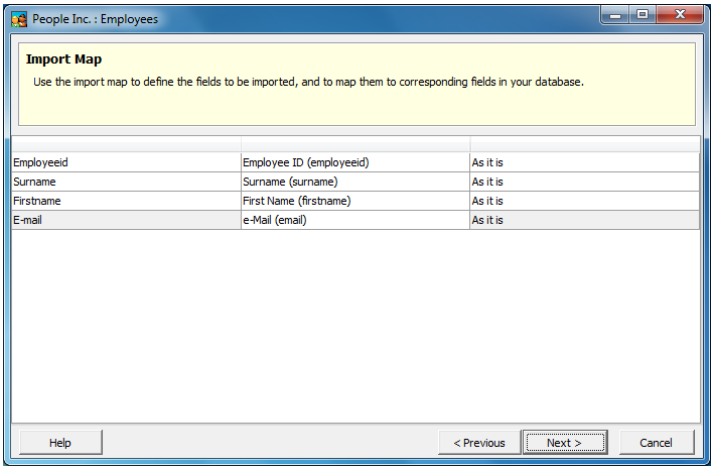
- Ignore Duplicates - the imported record is ignored and not imported into People Inc. No warning is displayed.
- Replace Duplicates, All Fields - the existing record is replaced by the imported record; all fields are replaced (note: any existing information for duplicate records will be overwritten with entries from the import file, or where no information exists in the import file, with blank entries).
- Replace Duplicates, Imported Fields Only - the existing record is updated with the imported record fields, leaving any fields that are not in the import file unchanged.

Import action on duplicates



The next screen in the import wizard enables users to map fields

Import File Details



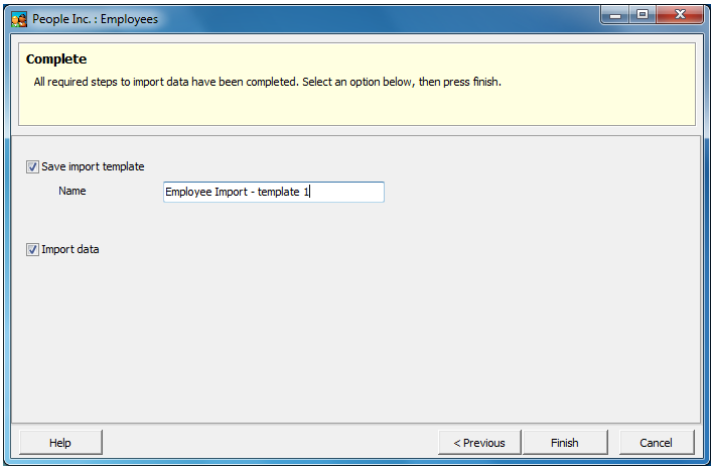
In this screen, in the Import field column, People Inc lists the information in the header row of the import text-file. If there is no header row in the file, the first row of the data itself is displayed as an example.

The second column makes available all the fields in the selected People Inc screen. The matching field in the screen can be selected for each entry using the drop-down menu. Note that the primary key must be included as one of the mapped fields, and that this must be linked to the information in the import file that uniquely identifies records.

The mapping column details the action for each row. This entry is normally either As It Is, or Not Mapped, however, the system can force data to upper case, to lower case, or to mixed case if desired.

Once the mapping is complete, the data can be imported.

Import template save



If the import-template is to be used again, the template should be saved before the data is imported. The Wizard provides an option to save the template so that it can be used again at some point in the future (to import further data of the same type).

When re-using a template to import data rather than create a new template when the Wizard is started, the user selects an existing template to use to import the data.

9. Using the Screen Designer

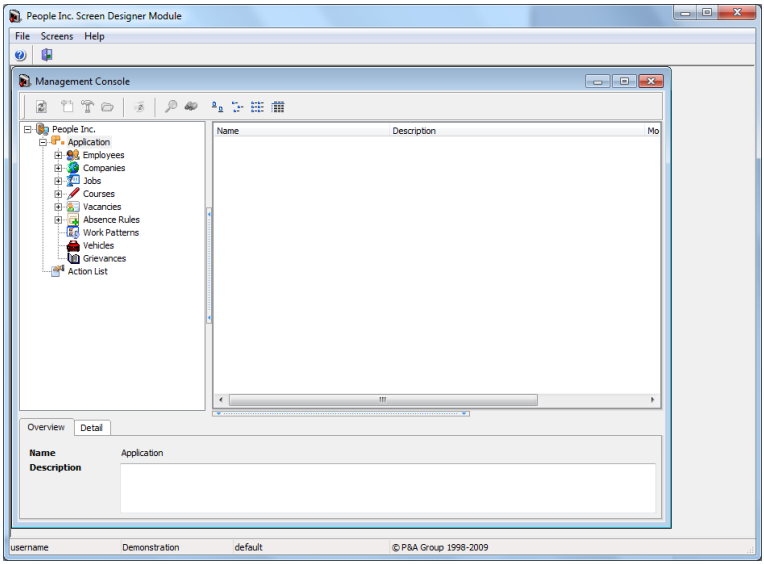
Overview

People Inc. is supplied with a screen design tool. This tool enables users to add fields to existing screens and also create new screens (and make corresponding database modifications). All the existing People Inc. data screens were created using the Screen Designer and they can all be modified using the screen designer. The screen design tool also enables users to delete fields or even entire screen definitions (and the associated database structures).

The screen designer also enables users to add and modify triggers. Triggers can be used for example to validate data, run calculations, generate e-mails, or populate data tables. Note that some of the triggers defined within the standard screens have been set as system functionality and can therefore not be modified by the user (it is however possible for the support team at P&A Software to modify these system triggers.

The Screen Designer can be started from the P&A Group program group on the Start Menu. Access to the Screen Designer is gained via the same login dialogue and user account details that are used for the People Inc. Windows client. Note that the Screen Designer is an optional component that may not be installed, and that not all users will be granted access to this module (access to this module depends on the users' security profile).

Screen Designer



System Design and Change Control

Screen design should be thoroughly thought through and a formal design drawn up before any changes are made (including details of how the screen will look, what changes to report and letter templates are required, how users will be affected, etc.). Changes made to screens 'on-the-fly' invariably take far longer to implement than well planned changes. The screen designer should not be used as a prototyping tool as this will invariably lead to unforeseen problems.

It is important to fully understand the implications of making a change to a screen before the screen designer is used. In particular, it is essential that before a change is made, the user is sure they understand the design of the existing functionality in detail (how items of data in different screens depend on, and interacts with each other). The screen designer is a powerful tool and the changes made can have far-reaching consequences.

Users can add fields and screens to the People Inc. system taking any design approach they wish; new fields and screens do not affect the functionality provided by the existing screens. Having said this, fully understanding the existing database design will ensure that users add appropriate screens and fields in the appropriate place.

Changes made to the fields and screens in a People Inc. system are reflected in all the databases associated with that system. It is not possible to have a People Inc. system that has multiple databases, each configured in a different way.

Detailed records of all changes should be kept when modifying the system using the screen designer. This should include details of what was changed, for what reason, and in what way. Detailed change-control will enable any future plans (or problem resolution) to be progressed more effectively.

Ideally, all People Inc. users should be logged off when changes are being made to screens. The People Inc. system however, will not enforce this, and will manage any issues if users do try to use the system.

System Backup

A backup should always be made of the entire system (ideally using the back-up feature provided within the People Inc. system) before making any change using the screen designer. Restoring a back-up may be the most effective way to reverse poorly implemented changes. Details of how to create a back-up provided elsewhere in this document.

Modifying Screens

All the existing People Inc. screens can be modified using the screen designer. In this way, additional fields and data controls (used to display fields in the screen) can be added to the screen. Fields and data-controls can also be deleted from the screens (and whole screens can be deleted if necessary).

A number of points of good practice should be considered when modifying a screen.

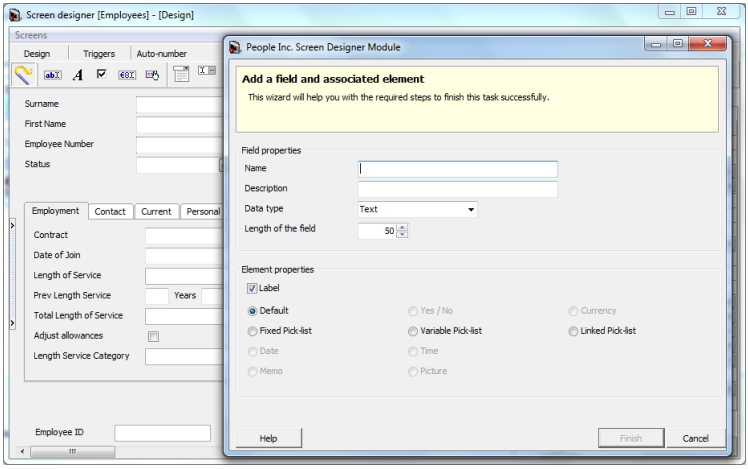
- The user should be 100% certain that they understand the functionality associated with any field before they change or remove the field from the system.
- Users should never re-use (re-label) a field in the database and use it for something it was not designed to do. This will inevitably cause confusion and problems at a later date.

Adding Fields to a Screen.

Fields can be added to screens by the user. When this is done, the new field is fully integrated into the system and can be used in reports, filters, letters, access profiles, and all other areas of the system functionality.

To add a new field to a screen, open the Screen Designer and right-click on the screen node in the Management Console. Select All Tasks > Modify Screen. The screen is displayed in edit-mode. Click on the Add a Field button (with the wand icon).

Add a Field Dialogue



Add a name for the new filed (note that it is not possible to use spaces, capital letters or special characters). Add a description for the field (if the field added is to record an ID Card number, the name might be 'idcardnumber' and the Description might Be 'ID Card Number'.

Select a data type for the field. The data type and length chosen depends on the information to be recorded in the field.

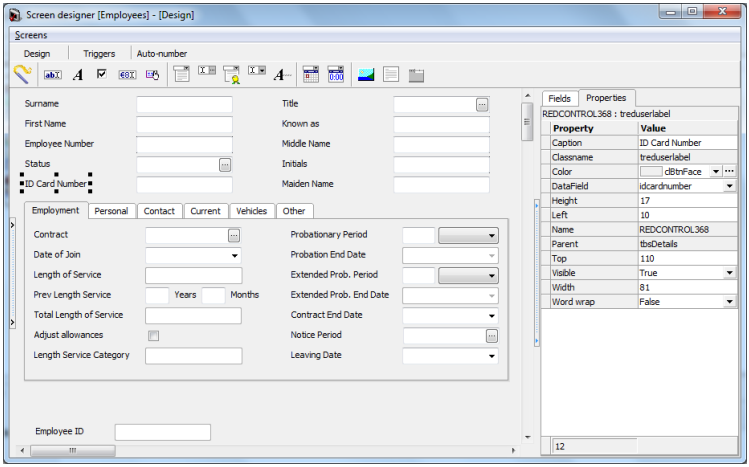
- Text: records text values; set the maximum number of characters
- Integer Number; number without a fractional part
- Real Number; number with a fractional part
- Currency; value to be used as a monetary value (in reports)
- Memo; text field with extendable number of characters (max 2048)
- Yes/No; logical field (tick-box)
- Date; date field
- Time; time field
- Picture; image

Once the data type is selected, the system will enable the choices for the screen control. For the majority of data types, there is only one option; for the text data-type there are 4 options:

- Default; simple text box
- Fixed Pick-List; pick-list with restricted number of options
- Variable Pick-List; pick-list that allows users to modify list of options
- Linked Pick-List; pick-list that enables user to select records from another screen

Clicking the Finish button adds the field to the database, and adds the data control to the screen. When this is done, the new data control and associate label appear in the top left hand corner of the screen (often super-imposed over an existing data control and label). These then both need to be moved to a suitable place on the screen. In the example below, ID Card Number has been added to the screen and moved to a fee space on the screen.

Screen with Added Field



Deleting a Field

Fields can be deleted from a screen using the screen designer. When this is done, all the data that was stored in the field (in all databases) is lost permanently. To delete a field, open the Screen Designer, right click on the screen and select All Tasks > Modify Screen.

It may be sufficient (and prudent) to simply remove a control from the screen, leaving the data field in the database (and the data intact). In taking this approach, the screen no longer displays the information, but it is available if needed at some point in the future. To remove the control, simply right-click (on the control on the screen) and select Delete Item.

To irreversibly delete the corresponding field (and all the data associated with it), select the Fields list on the right-hand side of the screen and hi-light the field in question in the list. Click on the Delete Field button (the fourth button with the rubbish bin icon in the button-bar at the top of the field list)

Deleting a Screen

It is possible to delete screens using the screen designer. It is however recommended that the user considers hiding the screen (using security settings) rather than delete the screen definition. This is because, when a screen definition is deleted, all the data associated with the screen is also deleted (and any reports that have been defined in the system to include data from that screen will no longer work).

Before a user can delete a screen, all the screen resources associated with that screen must be deleted first. Screen resources include filters and any letter templates and report templates associated with the screen.

Adding Screens - Screen Types

Using the Screen Designer, it is possible to add new main screens (parent screens), new sub screens (or child screens), and even sub-sub screens etc. Each screen in the system corresponds to a table in the database. It is also possible to link screens (and display information from one screen in another) using a variety of links.

Main Screens can exist in their own right (without the need for other screens to be present in the system). They hold 'principal' information used in the database, for example company details are recorded in a main screen (details of a company can be added to a system without there first being other information in the database).

Sub Screens are screens that hold subsidiary details associated with a record in a main screen. When a sub-screen is used, there will be more than one record in the sub-screen that is associated with a single record in a main screen. For example, a main screen may hold records of employees, and a suitable sub-screen would hold details of the employee's absence history.

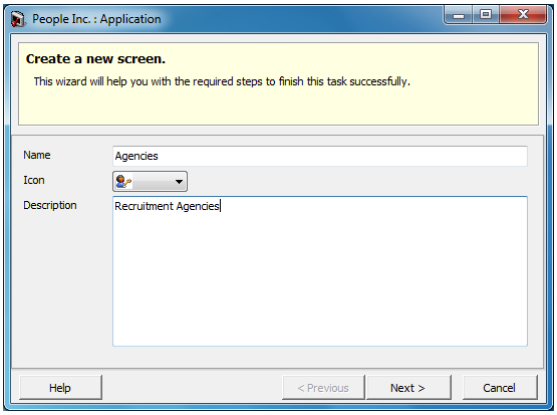
Creating New Main Screens

Adding a main screen to the People Inc. system is a 5 step process. These steps are:

- Create the new screen using the screen designer
- Create a key field (used in the database to uniquely identify records)
- Set the key field to be automatically generated
- Add further data fields to the screen
- Add a default filter for the screen to the system

To add a main screen to the system, right click on the Application node in the tree-view in the Management Console and select New > New Main Screen. A wizard starts; enter a name for the screen (select an icon to be used by the screen and add a screen description).

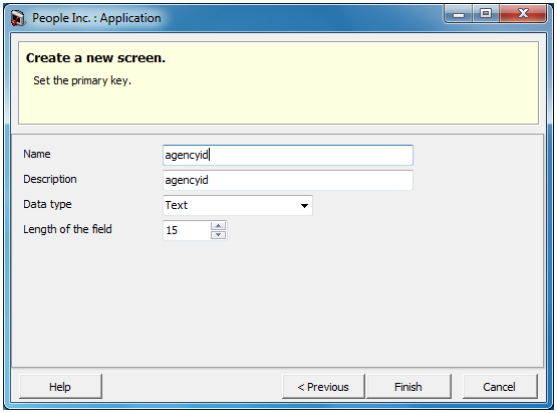
Name the Screen



As it is not possible to have a database table that does not have a primary key field, the user is asked to add this field in the second step of the wizard. The primary key field contains a unique value which enables the system to identify each individual record. This field is not normally seen by the user but is used when creating reports and filters and some custom triggers.

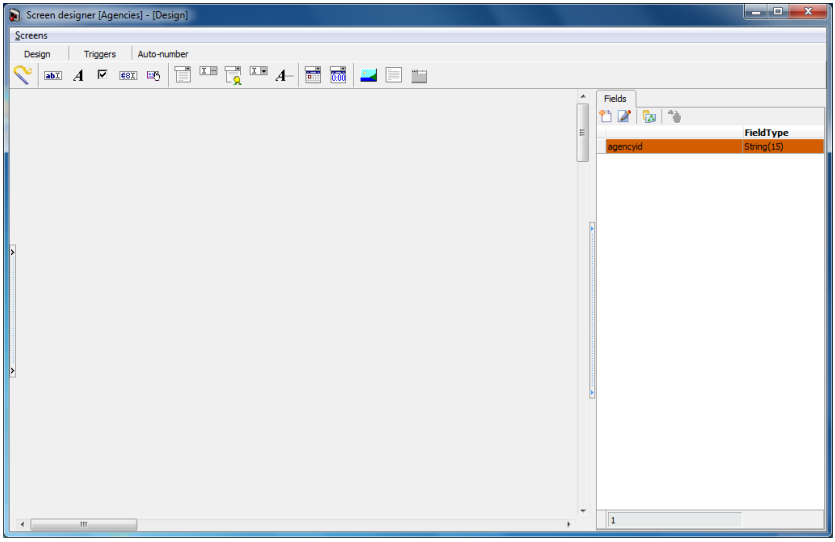
By convention, the key field has the same name as the screen (but singular rather than plural) with the letters 'ID' added on the end. When the field is created, the system defaults the field type to Text and the length to 15 characters. This is suitable for the vast majority of situations. If these conventions are adhered to, it is easy to identify and use the key field when setting up reports, letters and triggers in the system.

Set the Primary Key field



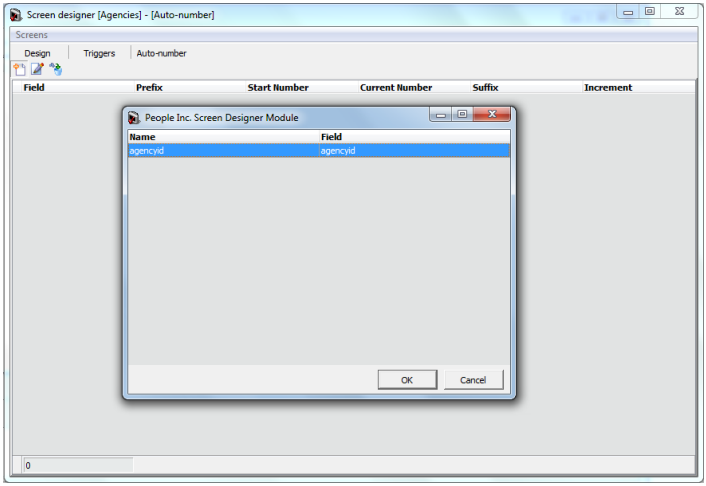
After completing the Wizard, the screen should look similar to the example below.

New Screen



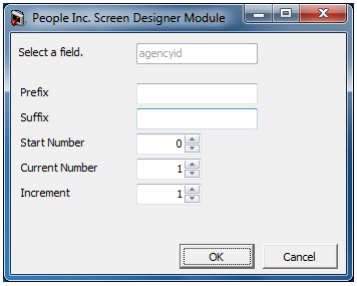
To ensure that the value recorded in the primary key field is unique (and to save the user the task of typing it in) the values stored in all primary key fields in People Inc. are normally automatically populated using auto-number generation. The auto-number generation can be configured using the Auto-number tab in the screen designer. By clicking on the 'auto-number' button on the top button bar, a list of available fields for which auto-number has been configured is displayed. Click on the Add Auto-Number button (the first button with the '+' symbol on it) to add auto-numbering to a field.

Auto-Number Generation



After selecting the Primary Key field from the list (and clicking OK), the properties for the auto-number generation can be set. The default setting for start number, current number, and increment are suitable for Primary Key fields.

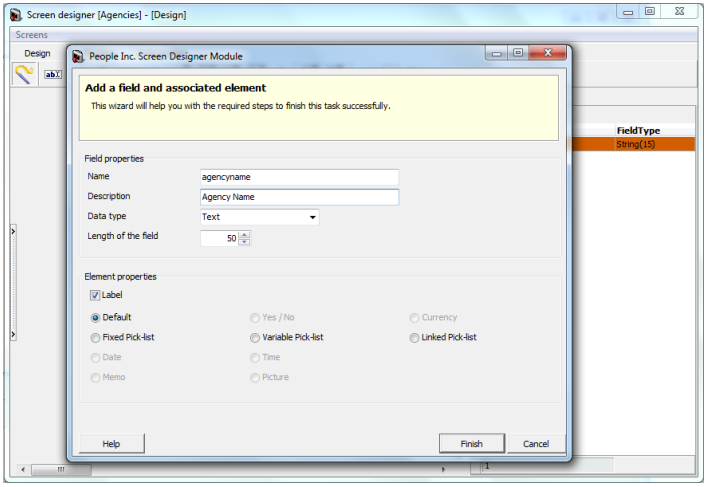
Auto-Number Field Properties



Note that it is possible to manage auto-numbering from the System Administration module. This is useful (for example) if it is desirable to have all applicant records generated in a particular year, prefixed with the year number.

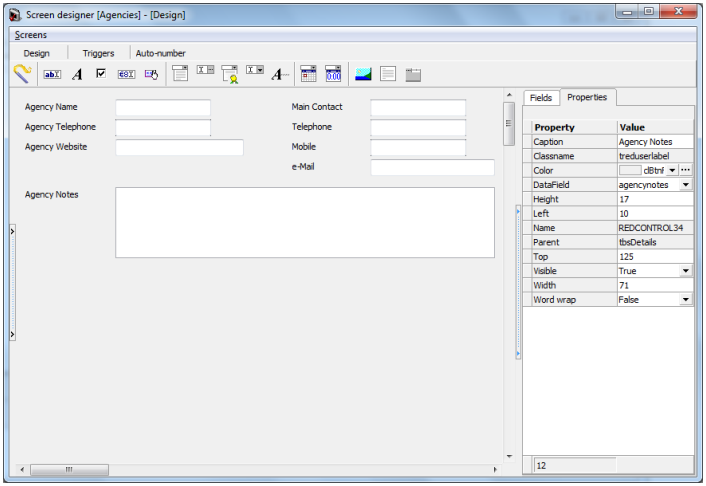
Additional fields can now be added to the screen by selecting the New Item button (first button on the button bar, with the wand icon) on the Design Tab of the Screen Designer.

Adding a New Field



After detailing the field's properties, a control for the field will be added to the layout of the screen. Controls can be moved on the layout by dragging and dropping them. This process is repeated until the desired data-items have been added to the screen.

Completed Screen Design



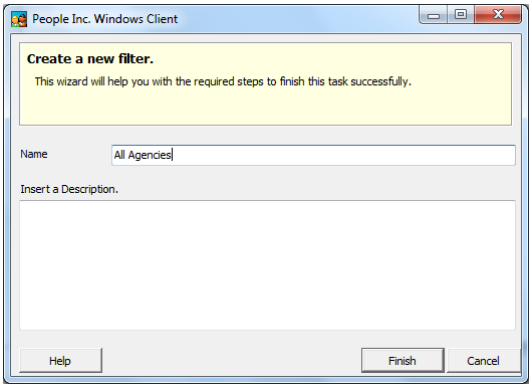
After completing the screen, save the changes (select Save from the Screen menu) and close the Screen Designer.

The new screen will now appear in the People Inc. System. Start the People Inc. Windows client and login to see the new screen. The Management Console now has a new Agencies entry (icon) beneath the People Inc. node. An entry can be created on the shortcut bar (if desired) by dragging-and-dropping the new icon onto the Shortcut bar.

Before the screen can be opened, a default filter has to be associated with the screen. To do this, first define a new filter for the screen by right-clicking on the screen in the Management Console and select New > New Filter. A wizard starts.

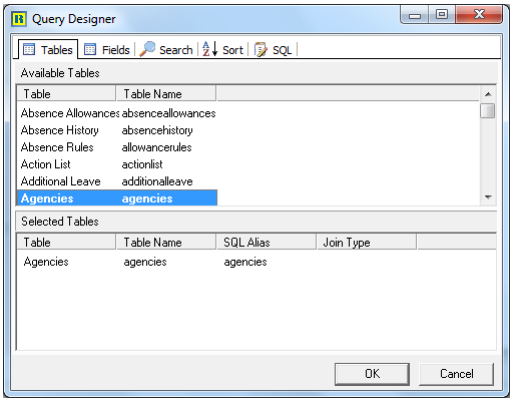
In the initial dialogue, a name is given to the filter

Creating a Filter – Specify Name



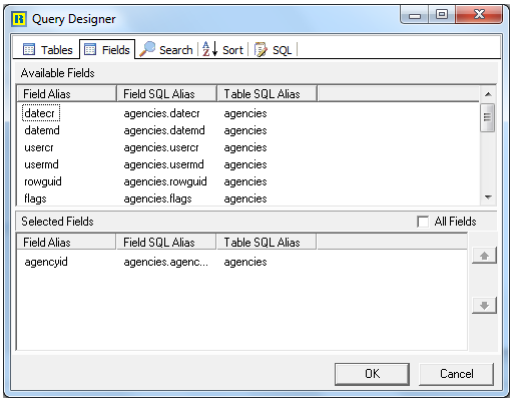
The Query Designer dialogue is displayed and the table associated with the screen is chosen

Creating a Filter – Specify Table



A field must be chosen in the filter; any field can be used (the primary key is normally chose; in this example agencyid)

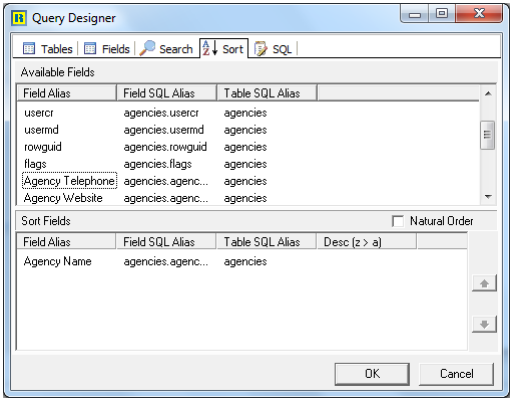
Creating a Filter – Select a Field



It is possible to specify a search criteria in a filter; this could be used (for example) to display all 'current' agencies (based on a status filed added to the screen). No criteria has been selected in this example.

The order of the records can also be selected in the filter (in this example the records will be sorted into Agency Name order)

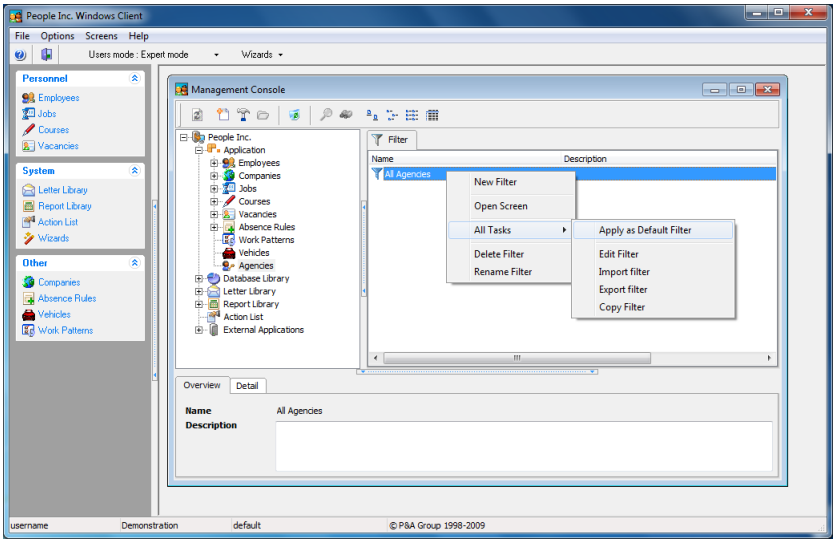
Creating a Filter – Set the Order



For more details on how to create filters, see the chapter on Working with Filters.

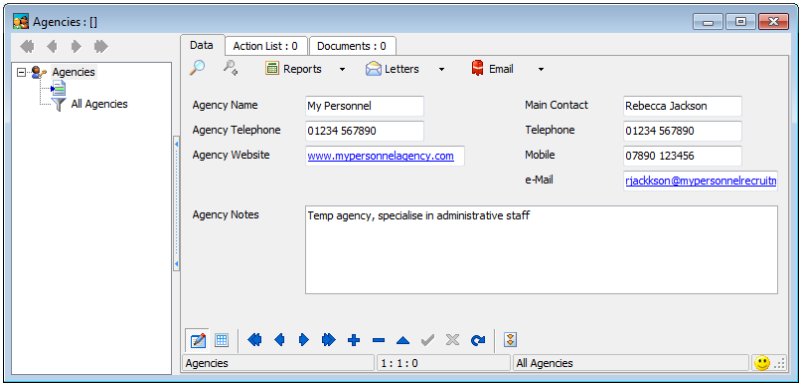
Once defined, the filter should be set as the default filter for the screen. To do this, right-click on the filter definition in the Management Console and select All Tasks > Apply as Default Filter.

Set Default Filter



Once the default filter is defined, the screen can be opened and used.

New Main Screen - Agencies

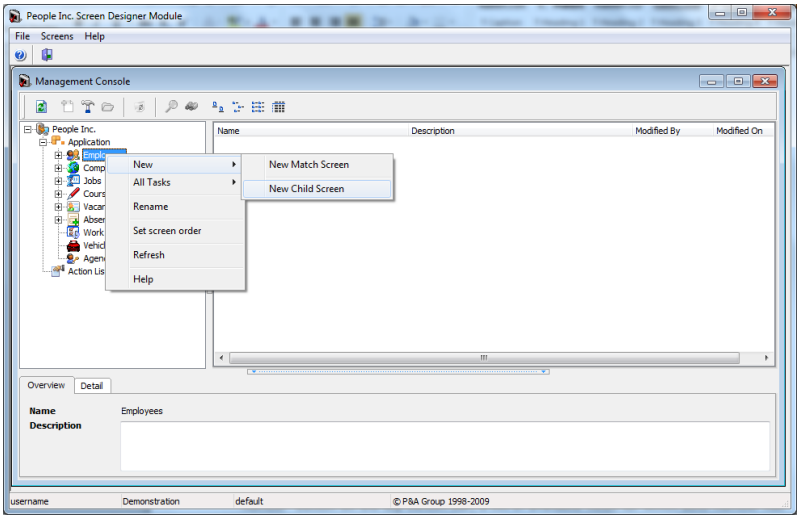


Creating New Sub-Screens

Sub Screens are screens that hold subsidiary details associated with a record in a main screen. When a sub-screen is used, there will be more than one record in the sub-screen that is associated with a single record in a main screen. For example, a main screen may hold records of employees, and a suitable sub-screen would hold details of the employee's absence history.

To add a sub screen to the system, open the Screen Designer and right click on the associated main screen in the Management Console and select New > New Child Screen.

Add a New Child Screen



Adding a sub-screen to the People Inc. system requires that the user goes through the same 5-step process defined for adding a main screen (above). These steps are:

- Create the new screen using the screen designer
- Create a key field (used in the database to uniquely identify records)
- Set the key field to be automatically generated
- Add further data fields to the screen
- Add a default filter for the screen to the system

Details of each of these steps is given in the section on adding a main screen (above).

10. Customising the ESS

The styling and branding of the People inc ESS Module is completely customisable. No special tools are required to fully modify the ESS to reflect the brand of the company in which it is installed.

The ESS module in People Inc 3.5 allows the user to customise their ESS home screen to display selected screens. These screens can be split into different sections to better differentiate between their uses. An example of this might be a group of request screens. Links to external websites can also be added. These may be links to a separate intranet or internal policy documents.

Customising header images

To customise the header images the company will need to produce replacement images or the same dimensions to display in place of the default images.

The company logo image should be 204 x 31pixels in size. The image should also have a transparent background otherwise a block of colour with surround the logo when placed over the header image. This image should be in PNG format.

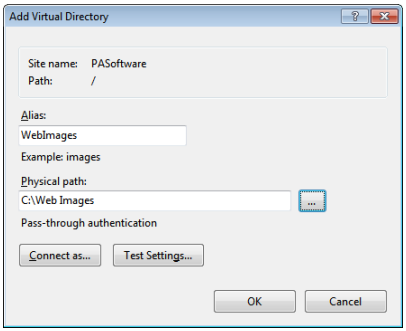
The main header image should be 143 x 1598 pixels in size. This image should be saved in JPG format.

These images can have any name. In this example the files are named new_logo.png and new_header.jpg.

These images should be placed in a new directory on the web server currently running the People Inc ESS. This directory can have any name (this example will use Web Images) but in modern Windows operating systems there may be permission issues if this directory is placed within Program Files.

A new Virtual Directory should be created in Microsoft IIS. This directory should point to the directory created in the previous step. This example will call use WebImages for the alias (the alias must be one word).

Add Virtual Directory



Once the virtual directory has been created the web.config file must be edited to point to the new images. By default this is located in C:\Program Files\PA Group\Web Client\Website.

Within the appsettings section the following lines should be uncommented. The format of these lines is

```
<add key="HeaderImageUrl" value="/[Virtual Directory Name]/[header image filename]" />
```

In this example the lines are as follows.

```
<add key="HeaderImageUrl" value="/webimages/new_header.jpg"/>
<add key="LogoImageUrl" value ="/webimages/new_logo.png"/>
```

The new images should now display when navigating to the ESS.

Customising the ESS using CSS

The style of the ESS is controlled using industry standard cascading style sheets (CSS). CSS allows web designers to completely re-style a web page without having to change every page individually.

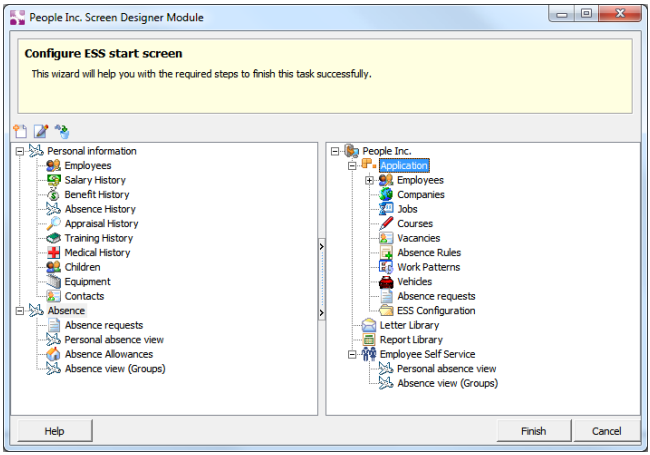
The CSS files for the People Inc ESS are found by default in C:\Program Files\PA Group\Web Client\Website\include.

It is recommended that backups of the default CSS files are taken before any changes are made so users can quickly and easily revert to the default styling if any issues are encountered.

Adding and removing screens from the Start Screen

Configuration of the start screen is mostly done in the Screen Designer. The configuration screen is accessed by right clicking 'Application' in the tree structure on left hand panel of the Management Console within Screen Designer. Choosing Configure ESS Start Screen will open the window illustrated below.

Configure ESS Start Screen



Sections are added and deleted by either right clicking a section name or using the icons above the left hand panel. In the example above the ESS has been set up to group absence screens together for easy access by the user.

Screens are added by dragging from the right hand panel to the intended section in the left panel. Screens can also be rearranged by dragging them around the right panel.

Screens can be removed from the ESS start screen by right clicking them and choosing 'Delete'. Please note that this will only delete the screen from the ESS start screen. It will not remove the screen from the system.

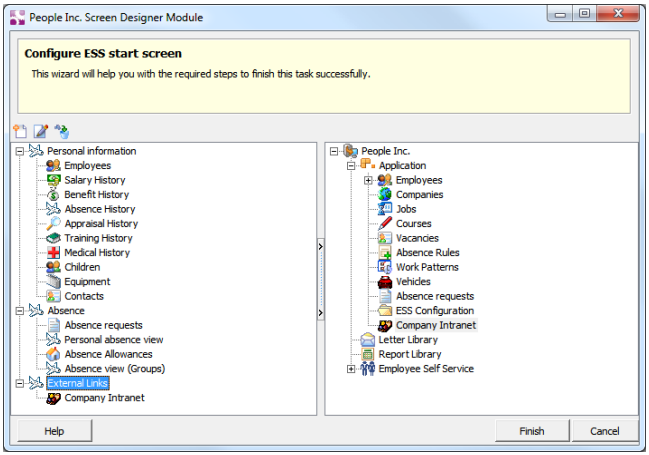
Adding External Links

The ESS start screen can be configured provide links to external web pages and documents. These could be links to a separate company intranet or documents available over the web.

The links are added using a combination of the Screen Designer and the editing the web.config file on the web server. As this is the case we recommend that only experienced users add external links.

The system creates external links by overriding links for specified screens. Creating a new external link first required creating a new Screen within the Screen Designer. An icon for the ESS can be chosen to make the purpose of the link clearer. The screen should be created as usual but no fields on controls should be added. Once the screen has been completed it can be added to the ESS start screen using the instructions above.

Configure ESS Start Screen



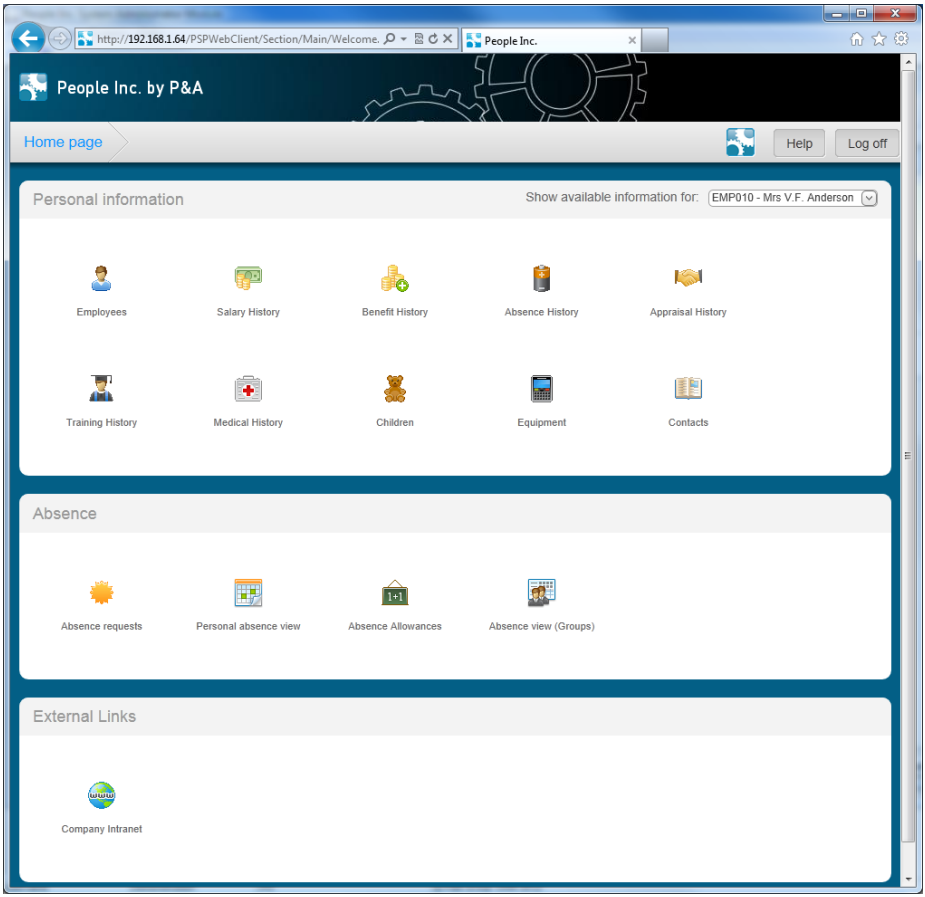
The next step is to configure the web.config file to override the link to the new screen. In the example above the new screen is called Company Intranet. As spaces are not allowed in table names the table for the screen Company Intranet is called companyintranet (lowercase with no spaces).

A new lines needs to be added in the section <ScreenOverrideItems> between the tags <items> and </items>.

<add tablename="companyintranet" navigateurl="http://intranet.co.uk" target="_blank" />

The table name should be set to the table name created above. The URL is the URL of the external link and the target should be "_blank" to open in a new page or "_self" to open in the same browser page or tab.

ESS Start Screen



11. Triggers

What is a trigger?

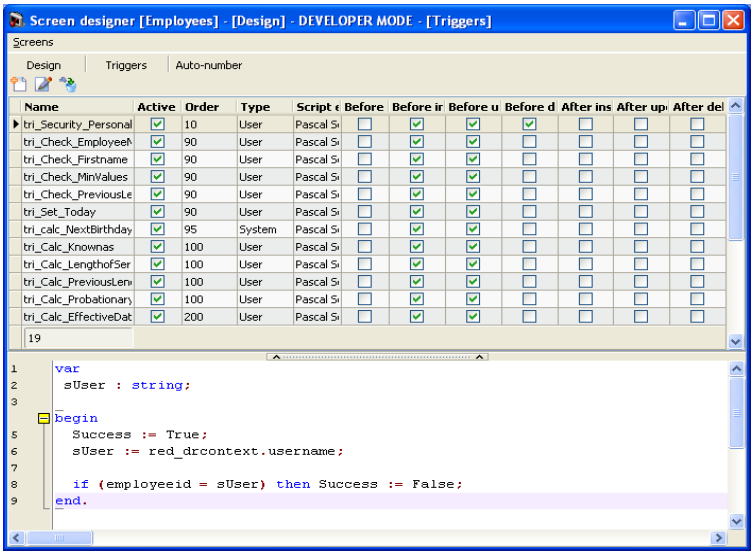
The triggers in People Inc. provide an extra level of functionality to the system. Many of the calculated fields seen on the various screens rely on triggers to update their values. Triggers can update fields, extract data from other screens in the system in addition to many other system functions that make People Inc so versatile. Triggers are fired when a record is saved. They cannot be automated and they will not run when data is imported using the import tool.

Triggers are written using the Pascal Script programming language. This document will cover basic concepts that will provide the user with a good grounding on which to start creating and editing triggers. Further training may be required to use certain higher level functionality provided by triggers.

Before any discussion on triggers can take place, it must be understood that editing or deleting the standard triggers shipped with People Inc. can result in a loss of functionality and data loss. Any changes made in the Screen Designer are made globally across all People Inc databases. P&A Software can provide no help desk support for trigger writing and any loss of data or functionality resulting from editing triggers is not covered by the support contract.

Triggers are created, viewed and edited using the Screen Designer. To see the triggers associated with a certain screen the user must Right Click on the screen they wish to edit and choose All tasks -> Modify Screen. There are three tabs presented at the top of the screen – Design, Triggers and Auto-number. To view and edit triggers the tab Triggers must be selected.

Screen designer - triggers tab



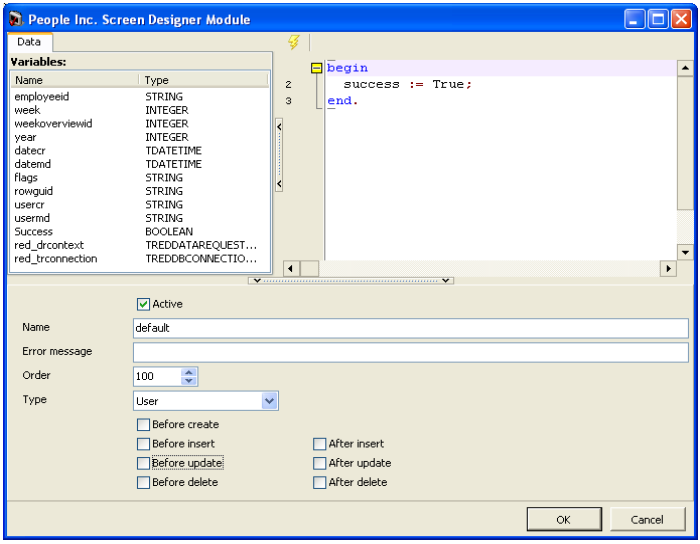
Three buttons are presented below the tab Design. From left to right these are ‘New’, ‘Edit’ and ‘Delete’.

Trigger Editor

To create a new trigger the user must click the ‘New’ button in the trigger section of the Screen Designer. To edit the trigger the user must press the ‘Edit’ button. Both buttons will take the user into the Trigger Editor.

On the left of the screen the available variables (discussed in the next section) are shown. To the right of the screen is the text editor where the user will write or edit code. Beneath these features there are options and controls for the trigger name and any error message that the user needs to display.

Trigger editor



My First Trigger

The user can create a simple trigger with just a few lines of code. The user can create a new trigger on any screen by clicking the ‘New’ button. The following code is pasted or typed into the text editor to create a trigger that will display the message ‘Hello World’.

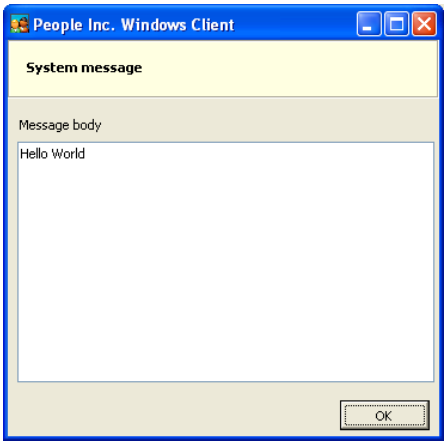
```
Begin
  REDShowMessage('Hello World');
  Success := True;
end.
```

A semi colon succeeds each line of code that specifically performs an action.

Once the code has been written the trigger must be set to Active by ticking the Active box above the Name box. A name then needs to be inputted. In People Inc. it is good practice for all trigger names to begin with 'tri_' and be descriptive of the trigger's function. The order, type and other options will be discussed later in the document.

After clicking OK and saving the screen the changes will be made and once People Inc. has been restarted and the appropriate screen has been chosen the trigger can be tested. When a new record is saved or an existing record is modified the trigger will run and the message 'Hello World' will be displayed.

System message



Basic Concepts

Before triggers are discussed further there needs to be a brief explanation of some fundamental concepts of programming. These include:

- Variables
- Data Types
- Assignment
- Boolean Values and Inequality
- If Statements
- Functions
- Comments and Style

Variables

A variable is an allotted space of memory that can be filled with a value and given a name. As the name suggests a variable can be assigned new values over the course of the program. Variables must be declared before they can be assigned a value. This is done in a trigger with the code

```
var
variableName : string;
```

In place of `variableName` the name of the variable would be substituted. Something short but descriptive of the data it will hold is best as the user never knows who might be maintaining the code they write.

After the colon there is the word `string`. This is where it is decided which data type the variable will hold. Once declared this cannot be changed. A string variable can only hold a string. An error will occur if we try to assign a different data type to a variable.

Variables already used for fields in the database do not need to be declared.

Data Types

These are by no means every data type but they can get the user started.

- String – A string of characters between quotations such a name or message. Another example could be an address line - '4 Rosemary Court'.
- Integer – Whole numbers. Can also be negative … -5, -4,-3,-2,-1,0,1,2,3,4,5.
- Double – Non whole numbers (can also be whole)… 4, 6.3, 8.12, 0.234.
- TDatetime – Holds both the date and time.
- Boolean – True or False.

Assignment

A value is assigned to a variable using the assignment operator `:=` As mentioned previously only a value of a particular data type can be assigned to a variable of the same data type.

```
stringVariable := 'This is a string';
integerVariable := 5;
doubleVariable := 6.323;
booleanVariable := True;
```

The value of one variable can also be assigned to another as long as they share the same data type (or a function is used to convert the data before assignment).

```
stringVariable1 := 'This is a string';
stringVariable2 := stringVariable1;
```

Now the variable `stringVariable2` also contains the string 'This is a string' If a new string were to be assigned to `stringVariable1`

```
stringVariable1 := 'This is still a string';
```

`stringVariable2` still contains 'This is a string' and `stringVariable1` now contains 'This is still a string'.

Boolean Values and Inequality

In programming many mathematical operators are used for calculations such as + and -. These can be used for simple mathematical equations. The operators = (equals), <> (not equal to), > (greater than), < (less than) >= (greater than or equal to) and <= (less than or equal to) are also used. These operators allow the creation of Boolean values.

Here are some examples…

3 = 3 is True as 3 does indeed equal 3
2 < 3 is True as 2 is less than 3.
3 > 10 is False as 3 is certainly not greater than 10.
10 <= 10 is True as 10 is equal to 10.

These operators can also be used with TDateTime data types. A later date is greater than an earlier date. For example…

01/02/2009 < 01/02/2011 is True.
05/12/2025 > 01/06/1985 is True.

These operators can be used to create a Boolean value that can then be assigned to a Boolean variable.

```
booleanVariable := (10 = 6);
```

`booleanVariable` now contains False as 10 does not equal 6.

This concept can also be used to test variables as variables of a certain data type can be used anywhere a value of the same data type is used. For example…

```
integerVariable := 4;
booleanVariable := (integerVariable = 4);
```

`booleanVariable` now contains the value True. `integerVariable` was assigned the value 4 and when tested for equality with 4, it is seen that it is true.

True or False (or Boolean) values play an integral part in programming and People Inc triggers especially. When creating a new trigger the system presents the user with the code…

```
Begin
        Success := True;
end.
```

If, at the end of the trigger, the variable `Success` (we do not need to declare this variable) is still set to True the trigger will allow the user to save the record.

The user may see code in the triggers that sets the Success variable using mathematical operators seen above.

```
Success := (aField = 0);
```

In this case the trigger will only succeed if the value assigned to `aField` is equal to 0.

Another aspect of Boolean theory is that of AND and OR. AND requires all values to be True for the entire statement to be True. For example…

(True AND False) = False
(True AND True) = True

OR, conversely, only requires one value to be True. For example…

(True OR False) = True
(False OR False) = False

If and Else Statements

Another way to set the Success variable that is often used in the standard People Inc triggers is with an `if` statement. The `if` statement uses the following syntax

```
If (Boolean value) then
Begin
       **Some code**;
End;
```

If only one line of code is to be executed it is also acceptable to write…

```
If (Boolean value) then **line of code**;
```

What the statement is doing is testing the Boolean value and if that value is true the code between `then` and `end` will run. If the Boolean value is false the code will be skipped over.

The following line of code, therefore can be used to test a variable and set the `Success` variable to true or false accordingly.

```
If (aField = 0) then Success := False;
```

An `else` statement can also be added to the above piece of code to increase its functionality. An else statement will run only if the Boolean value within the `if` statement is false. For example…

```
If (aField = 0) then
Begin
      Success = False;
End else
Begin
      Success = True;
End;
```

Now the trigger will succeed if `aField` does not equal 0.

Functions

Functions are self contained pieces of code that provide a certain job. There are many P&A custom functions used in triggers in addition to the Pascal standard functions.

A function can take parameters. These are values that will be passed to the functions and used in the calculations to affect the output.

A function that accepts no parameters is called using the following syntax.

```
someFunction();
```

For a function that takes two parameters the following syntax is used.

```
someFunctions(Param1, Param2);
```

Functions generally return a value so this value needs to be assigned to another variable.

```
myVariable := someFunction();
```

A common function used in People Inc Triggers is the `isnull()` function. This takes one parameter which is a field variable and returns True if the field is empty in the database or False if it isn't. As the returned value is Boolean we can use this function to control an `if` statement.

```
If ( isnull(aField) ) then **some code**;
```

Comments and Style

It is good practice to provide comments to go with any code that is written. These can help understand a piece of code's function at a later date. This could be the same programmer that wrote the original code or it could be someone new. Comments are added using forward slashes for single line comments.

```
//This is a comment
```

For multi line comments curly braces ({ }) are used.

```
{ This is a
      multi line comment }
```

Comments are especially important when writing advanced code or declaring functions as the purpose of the code may not be easily apparent.

It may have been noted that this document, and the triggers themselves, share the same style of code. It is good practice to lay out code in the same style as is seen in this document and the standard triggers. This style improves readability for future programmers.

The main aspect of good programming style is indentation. Generally it is expected that the lines between `begin` and `end` should be indented by one tab. If between begin and end there is an `if` statement, all code contained in the `if` statement should be indented by another tab.

```
Begin
        If (anExample = 0)
        then
                **this line is indented with two tabs**
        End
 End.
```

Writing Triggers

Validation

```
Begin
   Success := True;

   if    (previouslengthofservicemonths    >    11    )    then
       Success := False;

end.
```

This trigger is taken from the Employees screen in People Inc. Its purpose is to validate that a field (`Previouslengthofservicemonths`) contains a sensible value. If the field contains a higher value than 11 then the user should just increase the value in the Previous length of service years field.

All triggers in People Inc start with `Begin` and end with `End`. Along with `Success := True` they make up the skeleton trigger that will greet the user when creating a new trigger.

After setting the Success variable to True the trigger contains an `if` statement that checks the variable `previouslengthofservicemonths` (automatically declared by People Inc and assigned the value inputted by the user). If the value in the variable is 12 or more, the Boolean value will be True and the `if` statement will run. `Success` will be false and the trigger will fail and the user will be notified with the pre-defined error message.

Populating a Database Field with a Trigger

A common use of triggers is to populate a field in the database. The example below is from the Employees screen and populates the `knownas` field with the First Name if Known As has not been inputted…

```
begin
  Success := True;
  if (IsNull('knownas') OR (knownas = '')) then
  begin
    knownas := firstname;
    SetNotNull('knownas');
  end;
end.
```

The basic skeleton of the trigger can be seen as before and the familiar `if` statement. We can see the use of OR which means that only one of the two sub-statements needs to be True for the whole statement to be True and the `if` statement to run. The function `IsNull()` is also used which will return True or False depending on the status of the field.

With these two concepts revisited it can be read that the `if` statement will only run if the `Knownas` field is empty or contains an empty string. The difference between the two is subtle and beyond the scope of this document.

When the `if` statement runs the `Knownas` field is assigned the value of the `Firstname` field. We then see the new function `SetNotNull()`. This function must be called for the field in the database to be updated.

Basic Calculations

One of the main uses for a computer is making calculations. This can be done in triggers using the basic mathematical operators. Simple calculations can be achieved like…

```
integerVariable := 3 + 5;
```

But that wouldn't be very useful as the code would have to be changed to edit the numbers used in the calculation each time. It's much more useful to use variables – especially when dealing with user input as in People Inc.

The following trigger is taken from the Job History screen. It calculates the full contractual hours by summing each day's hours.

```
begin
        contractualhours := hoursmonday + hourstuesday +
        hourswednesday + hoursthursday +
        hoursfriday + hourssaturday + hourssunday;
        SetNotNull('contractualhours');
        Success := True;
end.
```

It can be seen that the variable `contractualhours` is being assigned the sum of the values of all 7 days. The function `SetNotNull()` is then called and true is assigned to the variable `Success`. Other mathematical calculations like multiplication (using the * operator) and division (using /) can be performed. Pascal script uses the same precedence for the operators as conventional mathematics. Multiplication and division are performed before addition and subtraction and brackets trump everything so if the user is unsure they

should use brackets to specify the order in which calculations are to take place. For example…

4 + 5 * 6 = 34

(4 + 5) * 6 = 9 * 6 = 53

It's always good practice to test any calculations within user created triggers to make sure no errors in logic have occurred.

Here is a code fragment from the FTE calculation trigger for the Job History screen

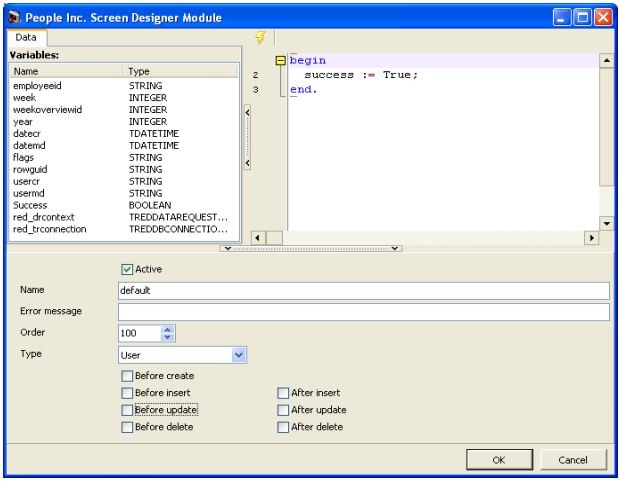
```
fte := (contractualhours/fFulltime) * 100
```

It can be seen that the developer has specified that the division take place before the multiplication.

Trigger Options

There are several options available to the user when creating a trigger. Triggers can be run in a certain order and at different times in the database update process. The Order option allows the user to specify the order in which the triggers fire. A trigger with an order value of 100 will fire before one with a value of 200. This order is only valid between triggers that are fired at the same time in the database update process. A trigger with an order value of 300 but set as 'Before Insert' will fire before a trigger with an order value of 100 but set to fire 'After Insert'.

Trigger editor



- Except the before create trigger, other triggers can be fired when the users inserts, updates or deletes a record in a screen, which results in the following possibilities:
- Before create - Fired only when the user action is new record. Used for creating default values that are more complex than using the standard default values functionality in fields
- Before insert - Fired only when the record is inserted for the first time and the user action is save record. There is no record yet in the database
- Before update - Fired every time the user action is save record. There is no record yet in the database
- Before delete - Fired every time the user action is delete record. The record is still available in the database.
- After insert - Fired only when the record is inserted for the first time and the user action is save record. The record already exists in the database.
- After update - Fired every time the user action is save record. The record already exists in the database.
- After delete - Fired every time the user action is delete record. The record does not exist in the database anymore.

12. Data Back-up

Overview

It is important to take regular backup copies of the People Inc databases. This should be done by either running a back-up:

- from SQL Servers Enterprise Manager (SQL Server users only)
- from within System Administration Module (SQL Server and MSDE users)
- using an SQL script (SQL Server and MSDE users)

It is not recommended that users simply copy the SQL Server/MSDE database files themselves (they are permanently in use unless the server is first stopped and therefore difficult to copy). Furthermore, while it is possible, it is not simple to recover a system from files that have been copied in this way.

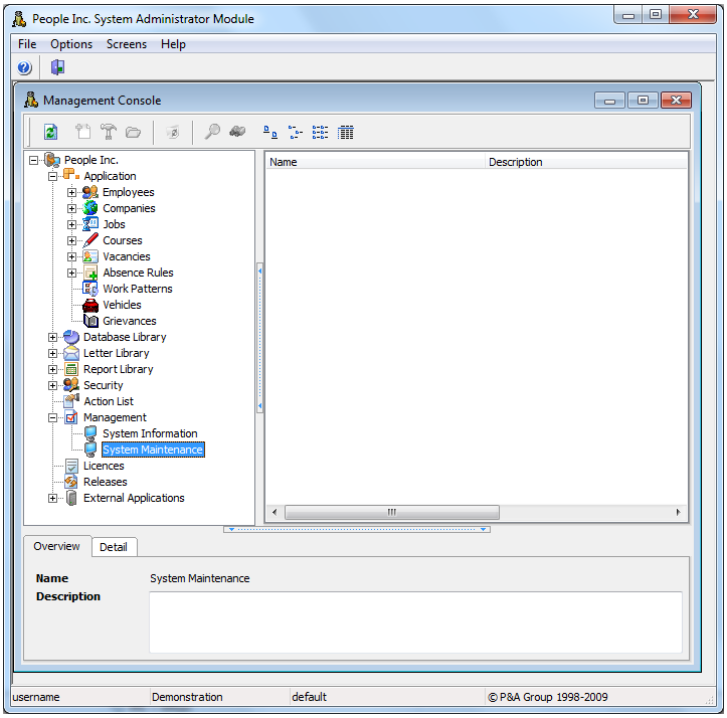
Backing up data from Enterprise Manager

If a full copy of SQL Server is used to host the databases, an SQL Server administrator can configure SQL Server to automatically back the databases up (every day for example); backups can be automated using the back-up facility within Enterprise Manager. See the SQL Server documentation for details.

Backing up data

A full database back-up contains everything needed to recover the People Inc system (user data, together with screen, letter and report definitions, etc.). To create a full back-up of the People Inc databases, select System Maintenance option from the Management Console in the System Administration Module.

System Maintenance option



Right click on System Maintenance and then select All Tasks. Then select System Maintenance. Follow the steps of the back-up Wizard, choosing to backup shared data and all other databases; by default the back-up files are created in the folder:

C:\Program Files\PA Group\People Inc\Backup

This location can be modified using the Maintenance Manager utility (see below).

Back-up files

The files produced by a backup are a back-up set and should be kept together, and restored as a set. Note that a backup set may have more than 4 files. To keep the back-up safe, copy the files produces to a suitable back-up device (tape or CD).

It is recommended that the back-up is labelled with the system/database version (for example '3.4.0.456'). The version number can be found by selecting help>about on the People Inc menu. It is only possible to restore a back-up of a particular database version onto a system with the same version number.

Note that, when a back-up is restored, all existing data and screen/letter/report definitions are replaced with those on the back-up.

Unattended backup

For users who manage their databases using MSDE, to automate backups, it is recommended that the following script be run within MSDE using a utility called OSQL. Note that various parameters in the script may require modification for individual implementations of People Inc.

Sample backup_script.sql file

```
exec sp_dropdevice 'redshared30_backup', 'DELFILE'
go
exec sp_addumpdevice 'disk', 'redshared30_backup',
'd:\backups\redshared30_backup.BAK' EXEC ('BACKUP DATABASE [redshared30] TO
[redshared30_backup] WITH FORMAT, NOUNLOAD ,  NAME =''redshared30 backup'',
STATS = 100, DESCRIPTION = ''redshared30backup''')
go
exec sp_dropdevice 'redrecdir_1_backup', 'DELFILE'
go
exec sp_addumpdevice 'disk', ' redrecdir_1_backup', 'd:\backups\
redrecdir_1_backup.BAK' EXEC ('BACKUP DATABASE [redrecdir_1] TO
[redrecdir_1_backup] WITH FORMAT, NOUNLOAD ,  NAME ='' redrecdir_1 backup'',
STATS = 100, DESCRIPTION = '' redrecdir_1backup''')
go
exec sp_dropdevice ' redrecdir_master_backup', 'DELFILE'
go
exec sp_addumpdevice 'disk', ' redrecdir_master_backup', 'd:\backups\
redrecdir_master_backup.BAK' EXEC ('BACKUP DATABASE [redrecdir_master] TO
[redrecdir_master_backup] WITH FORMAT, NOUNLOAD ,  NAME ='' redrecdir_master
backup'',  STATS = 100, DESCRIPTION = '' redrecdir_masterbackup''')
go
exit
```

This script can be initiated from a batch file by using the command:

osql -Usa -P*password* -ibackup_script.sql -obackup_log.log

(where '*password*' is the password of the SA account on the server)

Data Recovery

Data recovery is achieved using the Maintenance Manager Utility. See the chapter on the Maintenance Manager Utility for details.

It is strongly recommended that users ensure that it is possible to restore the back-up sets, that they are producing from the system, and that they understand how much data may be lost when a back-up is restored (this will depend on the frequency and retention period of their backups). If possible, a full system restore should be tested periodically.

13. Maintenance Manager Utility

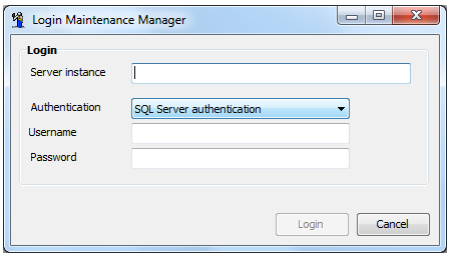
Overview

The Maintenance Manager application is designed to restore People Inc back-up sets. This can also be achieved with Enterprise Manager (supplied with MS SQL Server), however, this is a more complex and involved approach (note that Enterprise Manager is not supplied with MSDE).

Starting Maintenance Manager

The SQL Server name and the password for the SA account is required to enable users to log into the Maintenance Manager Utility. Click on the Maintenance Manager short-cut on the Start Menu to start Maintenance Manager.

Maintenance Manager Login dialogue



Restoring a backup

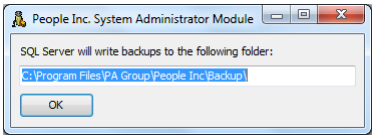
Backups are restored using the Maintenance Manager Utility. This is useful when the user wishes to:

- Recover data that has been inadvertently overwritten or modified
- Recover damaged database files

The simplest way to do this is with a Complete Restore. When a user performs a complete restore, ALL the People Inc databases are restored. This includes all screen, report template and letter template definitions, all user data, all user-account details, etc.

Before users can restore database, they need to first check the current back-up path. The back-up path can be checked in the System Administrator Module under Options > Show Backup Path.

Show Backup Path dialogue



If users wish to change the back-up path they need to select Settings > Set Backup Path from the Maintenance Manager menu in Maintenance Manager. Please note that the user should not change the backup path, but should cancel the dialogue after making a note of the current path.

People Inc backups comprise a number of files. When a backup is made, these files should be stored together. A Complete Restore requires a full set of backup files if it is to succeed. Note that the system version that generated the backup files must match the current version of the People Inc system; users should not attempt to restore a backup from a version 3.2 copy of People Inc into a version 3.4 system for example.

To restore the backup:

- Copy the back-up files to the back-up folder as detailed in the Show Backup Path dialogue (note that these files should have the original names, be the same version as the current People Inc system, and should be a complete back-up set).
- Start the Maintenance Manager utility (the SQL Server SA password is needed for this)
- Select the Restore > Complete Restore option from the system menu

Before the system performs the requested restore the user is required to enter some system generated confirmation numbers.

Once the restore is complete, close the Maintenance Manager utility and log in to People Inc in the normal way. Note that the user account and password information will reflect the current user details, of when the backup was made.

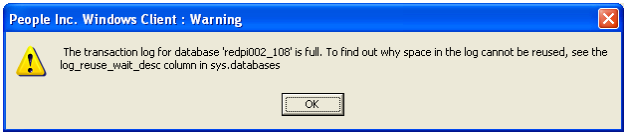
14. Managing SQL Server Transaction Logs

This document describes the management of the size of the SQL Server transaction logs associated with People Inc. databases. In SQL Server each database contains a data file and a transaction log file. SQL Server stores the data physically in the data file. The transaction log file stores the details of all the modifications that are performed on the database and the details of the transactions that performed each modification. This transaction-logging cannot be turned off in SQL Server.

In a default installation of SQL Server, database log files may expand to an unacceptable size. The expansion of the transaction logs can make it difficult to back data up and in the most serious scenario SQL Server may mark a database as suspect because of the lack of space.

SQL Server databases can be configured such that, as the volume of transactions grows, the size of the transaction log files increases automatically. In this situation, it is possible that the transaction log file may become very large and in extreme situations, the server may run out of disk space as a result. If this happens, SQL Server will no longer be able to add to the transaction log and as a consequence, it will no longer be possible to make any changes to the database. In this situation, the following error message may be displayed.

Log File error message



Reducing the size of transaction logs

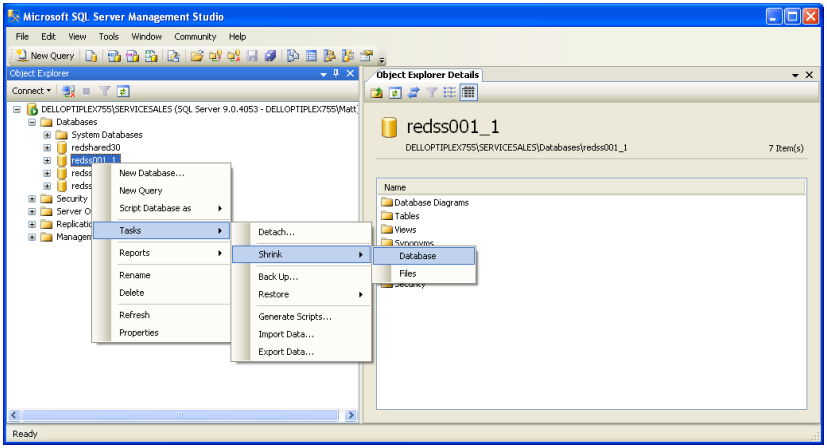
To recover from a situation where transaction logs have grown to an unacceptable limit, the IT administrator must first truncate any inactive transactions and then shrink the transaction log file. Note that the transaction logs are designed to maintain the transactional integrity of the database and must not be deleted.

When the transaction logs grow to an unacceptable limit, the transaction log should be backed up (immediately). While the backup of the transaction log files is created, SQL Server automatically truncates the inactive part of the transaction log (this contains details of completed transactions). SQL Server can then reuse this space in the transaction log.

Shrinking the transaction log file

Backing up the databases does not reduce the log file size. To reduce the size of the transaction log file, the IT administrator must shrink the transaction log file. To shrink a transaction log file, select the option on the context menu in SQL Server Management Studio.

Management Studio



Preventing the transaction log files from growing unexpectedly

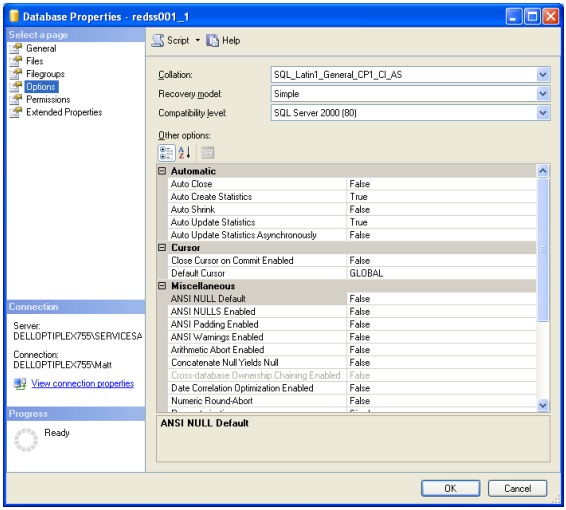
To prevent the transaction log files from growing unexpectedly change the recovery model of each of the databases to Simple.

By using the simple recovery model, you can recover your database to the most recent backup of your database. By using the full recovery model or the bulk-logged recovery model, you can recover your database to the point when the failure occurred by restoring your database with the transaction log file backups.

By default, in SQL Server 2000 and in SQL Server 2005, the recovery model for a SQL Server database is set to the Full recovery model. With the full recovery model, regular backups of the transaction log are used to prevent the transaction log file size from growing out of proportion to the database size. However, if the regular backups of the transaction log are not performed, the transaction log file grows to fill the disk, and you may not be able to perform any data modification operations on the SQL Server database.

You can change the recovery model from full to simple if you do not want to use the transaction log files during a disaster recovery operation. To do this, right-click on the database entry in SQL Server Management Studio and select Properties.

Database Properties



Alternatively, it is possible to prevent the transaction log files from growing unexpectedly by:

- Setting the size of the transaction log files to a large value to avoid the automatic expansion of the transaction log files.
- Backing up the transaction log files regularly to delete the inactive transactions in the transaction log.